

# UNITED STATES SPECIAL OPERATIONS COMMAND



## FISCAL YEAR 1996-1997 BIENNIAL BUDGET ESTIMATES

RDT&E, DEFENSEWIDE

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FEBRUARY 1995

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February 1995

UNITED STATES SPECIAL OPERATIONS COMMAND  
RESEARCH, DEVELOPMENT, TEST AND EVALUATION, DEFENSEWIDE

OVERVIEW

USSOCOM is a unified command with worldwide responsibilities to train, equip and maintain Special Operations Forces (SOF) in a ready state in support of the contingency plans developed by the five regionally oriented unified commands (USEUCOM, USCENCOM, USPACOM, USACOM, and USSOUTHCOM). When directed by the President, USCINCSOC will assume command of a special operation anywhere in the world. USSOCOM's Army component forces include special forces (Green Berets), Rangers, short to medium range infiltration/exfiltration aircraft, civil affairs specialists, and psychological operations specialists. Navy component forces consist of Sea, Air, & Land (SEAL) Teams and special boat units. The Air Force component forces consist of special operation units which provide medium to long range air infiltration/exfiltration aircraft, specially equipped gunships, and aerial refueling capability. USSOCOM is the only operational command directly responsible for determining its own force structure requirement, determining the related materiel requirements, procuring the SOF unique equipment, training, and deploying its own units.

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RDT&E DOCUMENTATION FOR FY 1996/1997 BIENNIAL BUDGET ESTIMATES

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UNITED STATES SPECIAL OPERATIONS COMMAND  
RESEARCH, DEVELOPMENT, TEST AND EVALUATION, DEFENSEWIDE

INTRODUCTION AND EXPLANATION OF CONTENTS

1. General. This document has been prepared to provide summary information on the United States Special Operations Command Research, Development, Test and Evaluation Program to Congressional committees during the FY 1996/1997 hearings. The R-2 and R-3 exhibits provide narrative information on RDT&E Program Elements (PEs) and projects. RDT&E documentation includes:

- Project Listing by Program Element.
- Exhibit R-1, Special Operations Command RDT&E Program.

- Exhibit R-2, RDT&E Budget Item Justification Sheet. These exhibits have been prepared under the following guidelines: R-2, paragraph A, is submitted for RDT&E PEs; R-2, paragraphs A through F, are submitted for each PE project funded in the budget years. Acquisition strategies are provided for non-technology projects that have a one-to-one relationship with an acquisition program and for sub-projects funded at \$1.0 million or more in either budget year.

- Exhibit R-3, RDT&E Program Element / Project Cost Breakdown. An R-3 is provided for each advanced development project.

2. Comparison of FY 1996 and FY 1997 Data. A direct comparison of FY 1996 and FY 1997 data in the R-1 Exhibit dated February 1994, will reveal only minor differences. The new exhibits provide increased detail on most projects.

3. Relationship of FY 1996/1997 Budget Structure to the FY 1995 President's Budget Submitted to Congress. Changes in budget structure are minor. There are no PE changes. All Major Force Program 11 RDT&E remains in Budget Activity 7. Within PE 1160404BB, Special Operations Tactical Systems Development, there are several revisions to project efforts: Project D615, SOF Aviation, has transitioned from MH-47E and MH-60K development to upgrade and sustainment RDT&E for all SOF rotary wing airframes; Project S0417, SEAL Support Systems, is renamed "Underwater Systems Advanced Development"; Project S1684, Special Warfare Combatant Craft, is renamed "SOF Surface Craft Advanced Development"; Project S375, Weapons Systems Advanced Development, is renamed "Weapons and Support Systems Advanced Development"; Project S675, Sustainment Engineering, transitions primarily to O&M in FY 1996 with the developmental efforts realigned to project SF100, Aviation Systems

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Advanced Development; Project DE14, Joint Advanced Special Operations Radio System, terminates in FY 1995; Project S900, Miscellaneous Equipment Advanced Development, efforts transition to Project S375, Weapons and Support Systems Advanced Development; and, one new project, S625, SOF Training Systems, is established in FY 1996.

4. Classification. This supplement is unclassified.

5. Table of Contents. The Table of Contents is presented with summary documentation (R-33, Project Listing, R-1) followed by R-2s and R-3s in Program Element (PE) order. Each PE R-2 is followed with its related project R-2s. Where applicable, R-3s follow project R-2s.

6. Classified Programs. Information on classified programs, PE 1160408BB, SOF Operational Enhancements, is provided under separate cover.

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## PROJECT LISTING BY PROGRAM ELEMENT

(\$K, All Items in Budget Activity 7)

February 1995

PROGRAM ELEMENT / PROJECTPE 1160279BB Small Business Innovative Research

S050 Small Business Innovative Research

PE 1160401BB Special Operations Technology Development

S100 Special Operations Technology Development

PE 1160402BB Special Operations Advanced Technology Development

P204 Explosive Ordnance Disposal - Low Intensity Conflict

P205 Special Operations / Low Intensity Conflict Studies

S200 Special Operations Special Technology

PE 1160404BB Special Operations Tactical Systems Development

DE14 Joint Advanced Special Operations Radio System

D476 PSYOP Advanced Development

D615 SOF Aviation

SF100 Aviation Systems Advanced Development

SF200 CV-22 SOF Osprey

S0417 Underwater Systems Advanced Development

S1684 SOF Surface Craft Advanced Development

3284 SOF Aircraft Defensive Systems

3326 AC-130U

3642 Aircrew Training System

S350 Special Operations Forces Planning and Rehearsal System

	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>FY97</u>	<u>FY98</u>	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>
	2,200	0	0	0	0	0	0	0
	6,444	5,511	4,090	6,554	7,928	8,776	9,040	9,310
	3,418	4,307	4,310	4,345	4,333	4,321	4,450	4,584
	1,451	1,436	1,035	1,680	1,676	1,449	1,493	1,539
	22,229	7,719	7,943	8,222	10,693	12,266	12,634	13,013
	2,500	3,062	0	0	0	0	0	0
	240	3,620	295	1,095	1,493	14,927	812	0
	25,062	0	945	0	1,393	29,765	12,738	995
	300	14,069	7,634	10,676	12,490	14,306	22,777	41,779
	14,700	0	0	0	0	0	0	0
	40,471	36,497	27,587	13,098	2,212	1,836	2,965	5,060
	7,936	43	5,797	3,054	3,682	2,606	6,279	721
	20,940	30,359	12,361	6,778	8,191	4,179	14,011	11,752
	32,821	2,186	6,252	15,031	6,578	1,747	1,472	1,472
	24,697	38,441	18,410	4,478	249	249	0	0
	5,366	2,087	9,653	6,678	5,374	2,786	2,786	2,786



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February 1995

## PROJECT LISTING BY PROGRAM ELEMENT

(\$K, All Items in Budget Activity 7)

PROGRAM ELEMENT / PROJECT

S375 Weapons and Support Systems Advanced Development

S600 Future SOF Aircraft

S625 SOF Training Systems

S650 Quiet Knight

S675 Sustainment Engineering

S700 Communications Advanced Development

S800 Munitions Advanced Development

S900 Miscellaneous Equipment Advanced Development

PE 1160405BB Special Operations Intelligence Systems Development

S400 SOF Intelligence

PE 1160407BB SOF Medical Technology Development

S275 SOF Medical Technology R&amp;D

PE 1160408BB SOF Operational Enhancements

S500A Operational Enhancements

TOTAL:

	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>FY97</u>	<u>FY98</u>	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>
S375 Weapons and Support Systems Advanced Development	2,226	0	199	2,298	2,463	1,843	3,640	2,702
S600 Future SOF Aircraft	0	0	0	0	464	12,621	21,399	49,260
S625 SOF Training Systems	0	0	2,488	7,861	7,961	5,473	9,852	1,990
S650 Quiet Knight	6,969	0	0	0	0	0	0	0
S675 Sustainment Engineering	9,615	13,643	0	0	0	0	0	0
S700 Communications Advanced Development	10,332	3,382	1,727	2,333	2,246	2,837	3,022	2,785
S800 Munitions Advanced Development	14,046	9,240	8,254	7,409	10,035	7,149	10,318	12,678
S900 Miscellaneous Equipment Advanced Development	1,451	0	0	0	0	0	0	0
PE 1160405BB Special Operations Intelligence Systems Development	5,242	2,932	2,901	3,443	10,399	6,271	8,284	10,204
PE 1160407BB SOF Medical Technology Development	1,310	1,782	1,891	2,377	2,639	2,726	2,801	2,880
PE 1160408BB SOF Operational Enhancements	19,135	20,316	16,534	19,057	18,893	22,831	23,450	24,377
S500A Operational Enhancements	281,101	200,632	140,306	126,467	121,392	160,964	174,223	199,887

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## SPECIAL OPERATIONS COMMAND RDT&amp;E PROGRAM

Appropriation: 0400 D Research Development Test &amp; Evaluation Defensewide

Thousands of Dollars

Program Element #	Title	Budget Activity	FY 1994	FY 1995	FY 1996	FY 1997
1160279BB	Small Business Innovative Research (U)	7	2,200	0	0	0
1160401BB	Special Operations Technology Development (U)	7	6,444	5,511	4,090	6,554
1160402BB	Special Operations Advanced Technology Development (U)	7	27,098	13,462	13,288	14,247
1160404BB	Special Operations Tactical Systems Development (U)	7	219,672	156,629	101,602	80,789
1160405BB	Special Operations Intelligence Systems Development (U)	7	5,242	2,932	2,901	3,443
1160407BB	SOF Medical Technology Development (U)	7	1,310	1,782	1,891	2,377
1160408BB	SOF Operational Enhancements (U)	7	19,135	20,316	16,534	19,057
	Total Operational Systems Development:		281,101	200,632	140,306	126,467
	Total Special Operations Command:		281,101	200,632	140,306	126,467

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE									PE 1160279BB Small Business Innovative Research
COST (in millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
PE 1160279BB (Small Business Innovative Research		2.200	0	0	0	0	0	0	0	0	3.949
S050, Small Business Innovative Research		2.200	0	0	0	0	0	0	0	0	3.949
<p><u>A. Mission Description and Budget Item Justification</u></p> <p>The Small Business Innovative Research (SBIR) project is a highly competitive three phase award system which provides qualified small business concerns with the opportunity to propose high quality innovative ideas that meet specific research and development needs of USSOCOM. SBIR is a result of the Small Business Development Act of 1992. It was enacted by Congress in Public Law 97-219, reenacted by Public Law 99-443, and reauthorized by the SBIR Program Reauthorization Act of 1992. Starting in FY 1994, the SBIR program was refocused towards dual use and defense reinvestment efforts. Phase I projects evaluate the scientific technical merit and feasibility of an idea. Awards are up to \$100,000 with a maximum six month period for performance. Phase II projects expand the results of, and further pursue, the developments of Phase I. Awards are up to \$750,000 with a maximum two year period of performance. Phase III is for commercialization of the results of Phase II and requires the use of private or non-SBIR federal funding. DoD publishes government agency proposal projects twice per year for a consolidated DoD Request for Proposal. USSOCOM then awards its proposed SBIR projects.</p>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)						DATE		FEBRUARY 1995			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE PE 1160401BB Special Operations Technology Development									
COST (in millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
PE 1160401BB (Special Operations Technology Development)		6.444	5.511	4.090	6.554	7.928	8.776	9.040	9.310	Cont.	Cont.
S100, Special Operations Technology Development		6.444	5.511	4.090	6.554	7.928	8.776	9.040	9.310	Cont.	Cont.
A. <u>Mission Description and Budget Item Justification</u>											
Projects provide studies and laboratory prototypes for USSOCOM to link non-system basic and exploratory research and development to Special Operations Forces (SOF) specific system engineering and manufacturing development and procurement. This project supports special operations forces, psychological and civil affairs forces involvement in foreign internal defense, and counterterrorism worldwide. It also supports special operations forces conduct of special reconnaissance and direct action operations in low, mid, and high intensity conflict. The objective of the SOF technology base program is to provide a balanced effort of studies and technology base funding across the exploratory research and advanced development categories in order to exploit technological developments of other organizations through aggressive resource leveraging. This resource leveraging (applying small incremental amounts of USSOCOM funding on top of significantly larger research investments by other DoD, government, and commercial organizations) will allow USCINCSOC to influence the direction of technology development or the schedule against which it is being pursued to acquire emerging technology for SOF.											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE										FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160401BB Special Operations Technology Development / Project S100											
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost		
S100, Special Operations Technology Development		6.444	5.511	4.090	6.554	7.928	8.776	9.040	9.310	Cont.	Cont.		

A. Mission Description and Budget Item Justification

This project provides studies and laboratory prototypes for the United States Special Operations Command (USSOCOM) to link non-system technology opportunities to future Special Operations Forces (SOF) specific requirements and technology goals. This program supports SOF conducting special reconnaissance, direct action, foreign internal defense, counterterrorism, psychological, and civil affairs operations worldwide. The objective of the SOF technology program is to provide a balanced effort of studies and exploratory development with emphasis on exploiting maturing technologies of other organizations through aggressive resource leveraging. This resource leveraging (applying small incremental amounts of investments to other Department of Defense, government, and commercial organizations) will allow the Commander, USSOCOM, to influence the direction of technology development or the schedule against which it is being pursued to acquire emerging technology for SOF. This project provides an investment strategy for USSOCOM to link basic and exploratory research and development with acquisition initiatives. The results of this program have the potential for transition to the Special Operations Special Technology project or an acquisition program. Sub-projects include:

- AC-130U Munitions/Weapons Enhancements. Comprehensive study of various gun systems/munitions technologies for mid-term and long-range gunship applications to increase capabilities especially increased standoff. Identifies platform constraints; performs systems analysis and trade-off studies; conducts technology risks assessments and influences/leverages Service efforts.
- Advanced Sniper Weapon Fire Control. Full wind vector ballistic solution at extended range (1200 meters).
- Battle Dress System. Development of various functional modules with the battle uniform.
- Improved SOF Power Sources. Study of existing and emerging high power density battery concepts and related power source technologies.



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		FEBRUARY 1995
R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160401BB Special Operations Technology Development / Project S100		
<ul style="list-style-type: none"> <li>• Diver Integral Magnetic Mine Detector. A magnetometer array to reduce the false alarm rate and increase the effectiveness of a swimmer using a hand-held sonar for very shallow water mine countermeasures.</li> <li>• Individual Operational Ration. An automated capability to structure rations to meet mission requirements.</li> <li>• Man-Portable Non-Line-of-Sight Weapon System. A lightweight, low observable, extremely accurate weapon designed for clandestine interdiction at ranges up to 5 kilometers.</li> <li>• Pursuit Deterrent Munitions (PDM) Trainer. A PDM simulator for safe training.</li> <li>• SOF Enhanced Moldable Explosive Charge. An improved formulation, higher energy density replacement for C-4 explosive.</li> <li>• Speech Processor. A real-time, interactive, imitative signals deception device.</li> <li>• Underwater Electromagnetic Designator. A low probability of intercept underwater magnetic beacon that can be adapted for communications or path marker.</li> </ul>		
FY 1994 ACCOMPLISHMENTS:		
<ul style="list-style-type: none"> <li>• (\$1,015K) Completed initial development of the Battle Dress System and Diver Integral Magnetic Mine Detector.</li> <li>• (\$473K) Underwater Electromagnetic Designator. Developed and tested brass board system.</li> <li>• (\$453K) AC-130U Munitions/Weapons Enhancements. Completed the systems analysis and trade-off studies.</li> <li>• (\$3,241K) Continued development of the Advanced Sniper Weapon Fire Control System, Individual Operational Ration, Man-Portable Non-Line-of-Sight Weapon System, PDM Trainer, SOF Enhanced Moldable Explosive Charge, and Speech Processor.</li> </ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160401BB Special Operations Technology Development / Project S100	
<ul style="list-style-type: none"> <li>• (\$962K) Improved SOF Power Sources. Completed power requirement study of existing and emerging high power density battery concepts. Continued development of hardware, Small Engine Electrical Generator and Small Engine Cold Weather Injection Systems.</li> <li>• (\$300K) Target Marking Technologies. Initiated development of a man-portable clandestine system for marking targets to passively identify friend or foe and to track specific targets in a SOF environment.</li> </ul>		
FY 1995 PLAN:		
<ul style="list-style-type: none"> <li>• (\$1,405K) Complete evaluation and transition of the basic Battle Dress System, Advanced Sniper Weapon Fire Control System, and the Diver Integral Magnetic Mine Detector.</li> <li>• (\$790K) Complete development of the Individual Operational Ration, Pursuit Deterrent Munition Trainer, SOF Enhanced Moldable Explosive Charge, and Underwater Electromagnetic Designator.</li> <li>• (\$975K) Continue development of AC-130U Munitions/Weapons Enhancements, Man-Portable Non-Line-of-Sight Weapon System, Improved SOF Power Sources, and Target Marking Technologies.</li> <li>• Commence development of the following new sub-projects: <ul style="list-style-type: none"> <li>• (\$1,411K) Signature Control Technologies. Technologies to enhance the ability of SOF platforms and SOF operators to remain undetected across the electromagnetic spectrum.</li> <li>• (\$181K) Head Mounted Thermal Vision. Demonstrate an ultra-light, low volume, low power, helmet mounted thermal viewer utilizing advanced Infrared focal plane array. Project leverages other government efforts.</li> <li>• (\$57K) Maximum Efficiency Language Training. Demonstrate advanced system to improve automated language training process.</li> <li>• (\$492K) Future Force Applications Weapons Technologies. Conduct study to determine technologies that provide SOF personnel</li> </ul> </li> </ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		FEBRUARY 1995
R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160401BB Special Operations Technology Development / Project S100		
<p>with less lethal capabilities to precisely or temporarily disable selected targets. This will form the baseline for other government agencies' technology efforts to support SOF.</p> <ul style="list-style-type: none"> <li>• (\$200K) Technology Development Exploitation. Exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas. Needs in these areas will be advertised to industry and government research and development agencies via Broad Agency Announcements, calls for white papers, and research and development conferences.</li> </ul> <p>FY 1996 PLAN:</p> <ul style="list-style-type: none"> <li>• (\$1,952K) Continue development of the following FY 1995 sub-projects to completion: Signature Control Technologies, Maximum Efficiency Language Training, Head-Mounted Thermal Vision, Pursuit Deterrent Munition Trainer, and Target Marking Technologies.</li> <li>• (\$433K) Leverage government efforts in the area of body armor compatible with the Battle Dress System.</li> <li>• (\$152K) Initiate development of advanced deception, information warfare technologies to support psychological operations. Specifically, brassboard prototypes that would provide spot to large area loudspeaker broadcast capability to influence target audiences with high quality audio deception.</li> <li>• (\$500K) HAMLET'S COVE. Demonstrate technologies to remotely detect, characterize, and type classify mines, obstacles, and barriers found in the littoral warfare region.</li> <li>• (\$853K) Conduct Concept Exploration. Studies on projects are being continued or initiated in support of the USSOCOM technology goals and requirements.</li> <li>• (\$200K) Technology Development Exploitation. Exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas such as reducing size, weight, and life of power supplies. Needs in these areas will be advertised to industry and government research and development agencies via Broad Agency</li> </ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE																														
R-1 ITEM NOMENCLATURE / PROJECT NO.		FEBRUARY 1995																														
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	PE 1160401BB Special Operations Technology Development / Project S100																															
<p>Announcements, calls for white papers, and research and development conferences.</p> <p>FY 1997 PLAN:</p> <ul style="list-style-type: none"> <li>(\$6,554K) Continue with the development of FY 1996 sub-projects. Initiate new projects resulting in brass boards or studies from the following technology areas: miniaturization, personnel protection, and weight reduction; advanced power sources; advanced SOF mobility platforms; advanced C4 systems and subsystems; mine detection and neutralization; advanced target locating, tracking, and marking; future weapons and enhanced explosive charges and munitions; advanced sensors, optics, and fire control; advanced information warfare and speech translation; and advanced learning, training, and planning.</li> </ul> <p>ACQUISITION STRATEGY: NA</p> <table border="1"> <thead> <tr> <th>B. Program Change Summary</th> <th>FY94</th> <th>FY95</th> <th>FY96</th> <th>FY97</th> <th>Total Cost</th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget</td> <td>6.744</td> <td>7.560</td> <td>6.944</td> <td>8.071</td> <td>Cont.</td> </tr> <tr> <td>Appropriated Value</td> <td>6.744</td> <td>5.560</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Adjustments to Appropriated Value / President's Budget</td> <td>(.300)</td> <td>(.049)</td> <td>(2.854)</td> <td>(1.517)</td> <td></td> </tr> <tr> <td>Current Budget Submit / President's Budget</td> <td>6.444</td> <td>5.511</td> <td>4.090</td> <td>6.554</td> <td>Cont.</td> </tr> </tbody> </table> <p>Change Summary Explanation:</p> <p>Funding: FY 1994 decrease funded a higher priority effort. FY 1995 decrease is for Congressional reduction of Defensewide RDT&amp;E for travel, civilian pay and a directed Department of Energy reprogramming. FY 1996 and FY 1997 changes account for inflation and to better align funding with expected obligations/outlays.</p> <p>Schedule: None.</p>			B. Program Change Summary	FY94	FY95	FY96	FY97	Total Cost	Previous President's Budget	6.744	7.560	6.944	8.071	Cont.	Appropriated Value	6.744	5.560				Adjustments to Appropriated Value / President's Budget	(.300)	(.049)	(2.854)	(1.517)		Current Budget Submit / President's Budget	6.444	5.511	4.090	6.554	Cont.
B. Program Change Summary	FY94	FY95	FY96	FY97	Total Cost																											
Previous President's Budget	6.744	7.560	6.944	8.071	Cont.																											
Appropriated Value	6.744	5.560																														
Adjustments to Appropriated Value / President's Budget	(.300)	(.049)	(2.854)	(1.517)																												
Current Budget Submit / President's Budget	6.444	5.511	4.090	6.554	Cont.																											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160401BB Special Operations Technology Development / Project S100	FEBRUARY 1995
<p>Technical: None.</p> <p>C. <u>Other Program Funding Summary</u> NA.</p> <p>D. <u>Schedule Profile</u> NA.</p>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE PE 1160402BB Special Operations Advanced Technology Development									
COST (in millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
PE 1160402BB (Special Operations Advanced Tech Dev)		27.098	13.462	13.288	14.247	16.702	18.036	18.577	19.136	Cont.	Cont.
P204, Explosive Ordnance Disposal - Low Intensity Conflict		3.418	4.307	4.310	4.345	4.333	4.321	4.450	4.584	Cont.	Cont.
P205, Special Operations / Low Intensity Conflict Studies		1.451	1.436	1.035	1.680	1.676	1.449	1.493	1.539	Cont.	Cont.
S200, Special Operations Special Technology Development		22.229	7.719	7.943	8.222	10.693	12.266	12.634	13.013	Cont.	Cont.
<p><u>A. Mission Description and Budget Item Justification</u></p> <p>Projects provide rapid prototyping efforts to provide technology and equipment to military operators who are confronted with explosive and hazardous material threats and to accelerate the acquisition of Special Operations Forces-peculiar equipment. It also provides specialized research and analytical support for OASD(SO/LIC). Technology goals are generated annually by ASD(SO/LIC) and USSOCOM with input from components and regional Commanders-in-Chief.</p>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		FEBRUARY 1995							
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development / Project P204									
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
P204, Explosive Ordnance Disposal - Low Intensity Conflict (EOD/LIC)		3.418	4.307	4.310	4.345	4.333	4.321	4.450	4.584	Cont.	Cont.

A. Mission Description and Budget Item Justification

This program is a rapid prototyping effort to provide technology and equipment to military operators who are confronted with explosive and hazardous material threats. The project objective is to provide the military user effective prototype equipment, with real operational utility, within 12-24 months after requirement definition. The project supports foreign internal defense, counter-terrorism activities worldwide, military assistance and training activities in the Middle East, Pacific, South America, and other LIC situations as they develop. Tasks focus on detection, countermeasures, and neutralization of explosive and hazardous material threats. Requirements submitted by the Joint Service EOD community, USSOCOM, U.S. Marine Corps, and other LIC-oriented military users are prioritized by the EOD/LIC Coordination Group at OSD. Sub-projects include:

- Acoustic Underwater Firing Device. Develop a swimmer-emplaced underwater firing device which is remotely actuated using a coded acoustic signal, eliminating the need to run detonation cord to the surface.
- Microwave Mine Locator. Develop a small, lightweight man-portable pulsed microwave mine location system which provides a visual image that can be readily used by EOD personnel to identify man-made, mine-like objects.
- Forward Looking Sonar. Develop a small boat obstacle avoidance sonar which can be readily installed on a 30-40 foot craft of opportunity for mine detection and classification as well as general obstacle avoidance.
- EOD Middle-East Training. Develop a portable tabletop PC-based CD-ROM interactive video training system, switchable between English and Arabic, for training EOD personnel to identify and render safe munitions.
- Underwater Navigation System. Develop and test a non-magnetic, swimmer inshore navigation system capable of navigating up to five Navy Special Warfare dive teams simultaneously.



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<ul style="list-style-type: none"> <li>● Standoff Detection. Develop a lightweight improvised explosive device detector capable of sensing emissions from electronic timers at distances of 6-10 feet.</li> <li>● Underwater Laser Imaging. Develop a small underwater laser imaging system which will increase diver viewing range from several feet to ten times that distance, and greatly improve our near-shore mine hunting capability.</li> <li>● Fiber-optic Communications. Develop an integrated fiber-optic communications system for use by Explosive Ordnance Disposal (EOD) teams in the performance of ordnance render safe procedures and including voice, video and explosive firing circuits.</li> <li>● Laser C-4 Initiation System. Develop a laser fiber-optic cable system to directly initiate C-4 explosives in order to eliminate the need for blasting caps, the most hazardous component of the explosive train.</li> <li>● Autonomous Search Vehicle. Develop a small autonomous vehicle capable of remotely surveying a beach or harbor for mine-like targets on the sea floor.</li> <li>● Advanced Radiographic System. Develop a compact, lightweight, man-portable, high resolution radiography system, including computer image processing, that provides real time internal views of conventional munitions fuzing and improvised devices.</li> <li>● Millimeter Wave Radar Probe. Develop a portable device to determine the nature of the explosive electronic circuitry (e.g., timer, receiver) by analyzing the modulation imparted on the radar return by the circuitry.</li> <li>● Automated Ferrous Locator. Develop a small, man-portable ferrous ordnance locator that combines three technologies: detection of ferrous magnetic signatures in soil; computer data storage; and positional coordinate locator.</li> <li>● Low Watt Wireless Communications. Develop a HERO-safe wireless communications system to support EOD operational units performing on-scene render safe procedures.</li> <li>● EOD Boat Signature Reduction. Establish a boat/motor configuration for minimal acoustic and magnetic signatures for use during EOD</li> </ul>			

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<p>APPROPRIATION / BUDGET ACTIVITY</p> <p>R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development / Project P204</p> <p>mine countermeasure operations.</p> <ul style="list-style-type: none"> <li>● Circuit Analysis/Verification. Develop a hand-held diagnostic tool to assist Explosive Ordnance Disposal (EOD) personnel in detecting electronic circuitry used in various fuzing and improvised explosive devices.</li> <li>● Diver Head-up Display. Develop a miniaturized liquid crystal display and associated electronics for the head-up display of multiple input information displayed either sequentially or on command by Navy divers.</li> <li>● Infrared Goggles. Demonstrate a new generation night vision goggle for use by EOD teams during operations involving booby-trap clearance/avoidance and explosive device entry, to make visible slight temperature differences emitted from a wide variety of sources.</li> <li>● Mine/Countermine Database. Develop a comprehensive database of land mines for Army Special Forces which is fully compatible with the EOD/LIC Interactive Video Training System.</li> <li>● Special Operations Forces (SOF) Vehicle Ballistic Protection. Develop an auxiliary system for use on SOF land vehicles to protect against explosive fragmentation and projectiles.</li> <li>● Mine Reconnaissance Underwater Vehicle. Develop a lightweight, remotely-controlled underwater vehicle with sensors and navigation systems suitable for shallow water mine hunting.</li> <li>● Imaging Ordnance Sensor. Develop an improved ground penetrating radar to increase detection depth and resolution, provide discrimination between ordnance and other buried objects, and make the system man-portable.</li> <li>● Improved SOF Pyronol Torch. Develop a pyronol torch for use in a variety of missions for special forces, such as rapidly cutting through large steel reinforcing bars.</li> <li>● High Resolution Diver Sonar. Develop a high resolution, multi-beam diver sonar with a visual display for mine detection and classification in low visibility water.</li> </ul>	

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<ul style="list-style-type: none"> <li>● Hands-Free Video and Light System. Head-mounted video and lighting systems for use by Explosive Ordnance Disposal (EOD) teams on land and underwater during ordnance inspections and render safe procedures, and provide real-time transmission of the video signal uprange.</li> <li>● Acoustic Underwater Firing Device Transmitter. Develop an acoustic underwater transmitter for use in commanding underwater firing devices, lift systems and marker buoys from a rubber boat at distances up to 2000 meters.</li> <li>● Improved EOD X-Ray. Develop a small, lightweight, man-portable EOD X-ray capable of 4"x 5" cassette developing as well as the standard 8"x 10" cassette, and designed to operate in any surface low intensity conflict environment.</li> <li>● V2 Computer Enhancement. Develop an enhanced version of the V2 computer which will be capable of electronically transmitting digital imagery, accurately mapping impacts on firing ranges, and supporting the CD-ROM version of the 60-series publications.</li> <li>● Universal Remote Measuring Device. Develop a remotely controlled, vehicle mounted measuring system for determining the dimensions of unidentified ordnance items, using a laser or ultrasonic rangefinder with a video link/camera on a robotic arm.</li> <li>● Explosive Kit Ready Storage. Develop a portable magazine capable of safeguarding a small quantity of 1.1 demolition explosives for immediate response, and requiring no explosive safety quantity distance arc.</li> <li>● Light Sensitive Ordnance Locator. Develop low light goggles or incorporate a low light camera into a diver's head-up display to facilitate underwater search of ship hulls for limpet mines.</li> <li>● Underwater Recoilless Dearermer. Evaluate a commercially produced advanced underwater recoilless dearmer kit as a remotely initiated, general purpose, reusable underwater limpet mine dearmer/disrupter which can be quickly and easily attached to the hull of a ship to provide a generic disruption capability against limpet mines.</li> <li>● Shore Signalling Device. Develop a remote underwater acoustic signalling device for low probability of intercept/low probability of detection combat swimmer communications.</li> </ul>		

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<ul style="list-style-type: none"> <li>Advanced Special Operations Forces (SOF) Operator Communications. Develop a hands-free communications system using sinus/bone phone technology to minimize feedback, distortion, and background noise when operating in high noise environments.</li> <li>SOF Hand-held SATCOM Radio. Develop a communications system which will allow an operator to communicate up to 3000 miles via SATCOM with the convenience of a cellular phone.</li> <li>SOF Laser Safe Window Coating. Develop field depot deployable overlays for SOF vehicle windshields (protective coating/plastic/glass) to provide eye protection from laser threats.</li> <li>Lightweight Side-scan Sonar. Develop a lightweight, side-scan sonar system with GPS, a computer and appropriate software for use in an inflatable boat for underwater surveys to map sea mines and obstacles.</li> <li>Explosive Ordnance Disposal (EOD) Hand-held All Materials Mine Locator. Develop a hand-held buried mine locator capable of detecting all materials such as wooden or plastic mine housings.</li> <li>SOF Tracking Identification Friend or Foe System. Develop a device to provide continuous tracking and identification of individuals, vehicles, and other objects, using low probability of intercept/low probability of detection digitally-encoded, transponder technology.</li> <li>SOF Sticky Foam Grenade. Develop a non-lethal grenade device which dispenses sticky foam with no toxicity or blast, for use in pursuit deterrence, blocking escape routes, immobilization, access denial, prevention of theft, etc.</li> </ul>			
FY 1994 ACCOMPLISHMENTS:			
<ul style="list-style-type: none"> <li>(\$178K) Completed and transitioned the following tasks: Microwave Mine Locator, Forward Looking Sonar, Acoustic Underwater Firing Device, EOD Middle-East Training, Standoff Detection, Fiber-optic Communications, Laser C-4 Initiation System, Advanced Radiographic System, Low Watt Wireless Communications, EOD Boat Signature Reduction, Circuit Analysis/Verification, and Diver Head-up Display.</li> </ul>			

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<ul style="list-style-type: none"><li>• (\$550K) Continued development of: Underwater Laser Imaging System, Underwater Navigation System, Autonomous Search Vehicle, Millimeter Wave Radar Probe, Autonomous Ferrous Locator, Infrared Goggles, and Mine/Countermine Database.</li><li>• (\$2,690K) Initiated new tasks: Special Operations Forces Vehicle Ballistic Protection, Mine Reconnaissance Underwater Vehicle, Imaging Ordnance Locator, Improved SOF Pyronol Torch, High Resolution Diver Sonar, Hands-free Video and Light System, Acoustic Underwater Firing Device transmitter, Improved EOD X-ray, V2 Computer Enhancement, and Universal Remote Measuring Device.</li></ul>			
FY 1995 PLAN:			
<ul style="list-style-type: none"><li>• (\$261K) Complete and transition the following tasks: Underwater Laser Imaging System, Underwater Navigation System, Autonomous Search Vehicle, Millimeter Wave Radar Probe, Automated Ferrous Locator, Infrared Goggles, Mine/Countermine Database, Improved SOF Pyronol Torch, and Acoustic Underwater Firing Device Transmitter, and Improved Explosive Ordnance Disposal X-ray.</li><li>• (\$3,028K) Continue development of: SOF Vehicle Ballistic Protection, Mine Reconnaissance Underwater Vehicle, Imaging Ordnance Locator, High Resolution Diver Sonar, Hands-free Video and Light System, V2 Computer Enhancement, and Universal Remote Measuring Device.</li><li>• (\$1,018K) Initiate development of:<ul style="list-style-type: none"><li>• (\$200K) Explosive Kit Ready Storage.</li><li>• (\$400K) Light Sensitive Ordnance Locator.</li><li>• (\$323K) Shore Signalling Device.</li><li>• (\$95K) Underwater Recoilless Dearermer.</li></ul></li></ul>			
FY 1996 PLAN:			
<ul style="list-style-type: none"><li>• (\$2,660K) Continue development of: SOF Vehicle Ballistic Protection, Mine Reconnaissance Underwater Vehicle, Imaging Ordnance Locator, High Resolution Diver Sonar, Hands-free Video and Light System, V2 Computer Enhancement, Universal Remote Measuring</li></ul>			

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		
Device, Explosive Kit Ready Storage, Light Sensitive Ordnance Locator, Shore Signalling Device, and Underwater Recoilless Dearthner.		
<ul style="list-style-type: none"><li>• (\$1,650K) Initiate new tasks to develop:<ul style="list-style-type: none"><li>• (\$250K) Advanced Special Operations Forces (SOF) Operator Communications.</li><li>• (\$750K) SOF Hand-held SATCOM Radio.</li><li>• (\$200K) SOF Laser Safe Window Coating.</li><li>• (\$200K) Lightweight Side-scan Sonar.</li><li>• (\$250K) Explosive Ordnance Disposal (EOD) Hand-held All Materials Mine Locator.</li></ul></li></ul>		
FY 1997 PLAN:		
<ul style="list-style-type: none"><li>• (\$3,425K) Continue development of: Mine Reconnaissance Underwater Vehicle, Imaging Ordnance Locator, High Resolution Diver Sonar, Explosive Kit Ready Storage, Light Sensitive Ordnance Locator, Underwater Recoilless Dearthner, Shore Signalling Device, Advanced SOF Operator Communications, SOF Hand-held SATCOM Radio, SOF Laser Safe Window Coating, Lightweight Side-scan Sonar, and EOD Hand-held All Materials Mine Locator.</li><li>• (\$920K) Initiate new tasks to develop:<ul style="list-style-type: none"><li>• (\$470K) SOF Tracking Identification Friend or Foe System.</li><li>• (\$450K) SOF Sticky Foam Grenade.</li></ul></li></ul>		
ACQUISITION STRATEGY: NA		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7						
B. <u>Program Change Summary</u>		FY94	FY95	FY96	FY97	Total Cost
Previous President's Budget		3.418	4.321	4.353	4.389	Cont.
Appropriated Value		3.418	4.321			
Adjustments to Appropriated Value / President's Budget			(.014)	(.043)	(.044)	
Current Budget Submit / President's Budget		3.418	4.307	4.310	4.345	Cont.
Change Summary Explanation:						
Funding:	FY 1995 decrease is Congressional reduction of Defensewide RDT&E for travel, civilian pay and a directed Department of Energy reprogramming. FY 1996 and FY 1997 funding reductions are inflation adjustments.					
Schedule:	None.					
Technical:	None.					
C. <u>Other Program Funding:</u>		NA				
D. <u>Schedule Profile:</u>		NA				

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development / Project P205									
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
P205, Special Operations / Low Intensity Conflict Studies		1.451	1.436	1.035	1.680	1.676	1.449	1.493	1.539	Cont.	Cont.
<u>A. Mission Description and Budget Item Justification</u>											
<p>This project provides specialized research and analytical support for the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict, ASD(SO/LIC). Projects address a broad spectrum of technical, acquisition, and policy issues relating to SO, LIC, counter- and anti- terrorism, peacekeeping, psychological operations, counterinsurgency, unconventional warfare, and contingency operations. The project supports and is integrated into overall DoD efforts to develop options for dealing effectively with a wide range of military responsibilities in the military environment other than war. This project provides a vehicle to initiate studies required to support acquisition documentation and philosophical policy issues regarding roles and missions of SOF in the changing world environment. Studies include: Terrorism Futures, Military Effectiveness in Low-Intensity Conflict, SOF Resources Blueprint, Contingency and Wartime Manning for Theater Special Operations Commands, Special Weapons Proliferation, Terrorism Strategy Validation, SO/LIC Resources Database Management, Special Operations Electro-optical Weapons, Strategies-to-Task Analysis of LIC, and Constraints on Antipersonnel Land Mines in Future Conflict.</p>											
FY 1994 ACCOMPLISHMENTS:											
<ul style="list-style-type: none"><li>• (\$1,451K) Projects included: terrorism strategy validation; continued investigation of issues regarding the use of SOF in controlling the proliferation of weapons of mass destruction; low-intensity conflict issues in Europe; special operations electro-optical weapons; strategies-to-task analysis of LIC; constraints on anti-personnel land mines; and other projects designed to increase the utility of SOF and the military tools for coping with LIC in a rapidly changing security environment.</li></ul>											



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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development / Project P205	
<p><b>FY 1995 PLAN:</b></p> <ul style="list-style-type: none"> <li>• (\$1,436K) Specific topics to achieve overall project goals include: SO/LIC Resources Database Management, Revolution in Military Affairs, Senior Interagency Policy Seminar, Nonlethal Weapons Policy Development, Combat Search and Rescue, and Special Operations Forces (SOF) Force Structure Integration Analysis.</li> </ul> <p><b>FY 1996 PLAN:</b></p> <ul style="list-style-type: none"> <li>• (\$1,035K) Continue to develop policy and planning alternatives, analyze force structure and resource allocations, and refine countermeasure options with regard to low-intensity conflict and the role of SOF in the new global environment. Projects will be geared to efforts to develop a coherent cost-effective approach to integrate policy, strategy, and force structure to support the national military strategy during a period of declining resources and changing threats. Specific topics will be developed based on developing world and technological conditions. Possible topics include: application of non-lethal technologies to SOF and LIC, SOF reserve component accessibility, SOF equipment acquisition, and the application of the revolution in military affairs.</li> </ul> <p><b>FY 1997 PLAN:</b></p> <ul style="list-style-type: none"> <li>• (\$1,680K) Continue to develop policy and planning alternatives, analyze force structure and resource allocations, and refine countermeasure options with regard to low-intensity conflict and the role of SOF in the new global environment. Projects will be geared to efforts to develop a coherent cost-effective approach to integrate policy, strategy, and force structure to support the national military strategy during a period of declining resources and changing threats.</li> </ul> <p><b>ACQUISITION STRATEGY: NA</b></p>		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development / Project P205				
<b>B. <u>Program Change Summary</u></b>						
Previous President's Budget		FY94	FY95	FY96	FY97	Total Cost
Appropriated Value		1.451	1.440	1.450	1.463	Cont.
Adjustments to Appropriated Value / President's Budget		1.451	1.440			
Current Budget Submit / President's Budget			(.004)	(.415)	.217	
Change Summary Explanation:		1.451	1.436	1.035	1.680	Cont.
Funding:		FY 1995 decrease is Congressional reduction of Defensewide RDT&E for travel, civilian pay and a directed Department of Energy reprogramming. Decrease in FY 1996 with corresponding increase in FY 1997 is to better align funding with expected obligations/outlays.				
Schedule:		None.				
Technical:		None				
C. <u>Other Program Funding Summary:</u>		None				
D. <u>Schedule Profile:</u>		NA				

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APPROPRIATION / BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE / PROJECT NO.										
RDT&E, DEFENSEWIDE / 7		PE 1160402BB Special Operations Advanced Technology Development / Project S200										
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost	
S200, Special Operations Special Technology		22.229	7.719	7.943	8.222	10.693	12.266	12.634	13.013	Cont.	Cont.	
A. <u>Mission Description and Budget Item Justification</u>												
<p>Special Operations Special Technology (SOST) is an advanced technology development program capable of rapid development and evaluation of prototypes to mate emerging advanced technologies with Special Operations Forces (SOF)-peculiar mission requirements. It also provides for SOF-peculiar advanced technology demonstrations. If further development is desired, SOST projects are prepared for transition into acquisition programs. SOST participation ends once the prototypes are evaluated and a transition package is prepared. A typical SOST transition package may include the prototype(s), evaluation results, draft Operational Requirements Document, and proposed acquisition documentation. The program addresses projects that are a result of unique joint, special mission, or area specific needs for which a few of a kind prototypes must be developed on a rapid response basis, or are of sufficient time sensitivity to accelerate the prototyping effort of a normal acquisition program in any phase. Sub-projects include:</p> <ul style="list-style-type: none"><li>• Communications Helmet. Lightweight, protective headgear with integrated communications for use by SOF during small boat, repelling, and parachute operations.</li><li>• Craft Identification Friend or Foe (IFF). Low cost system for incorporating situational awareness and IFF on SOF craft.</li><li>• Decompression Monitor. Time and depth monitor for use in SEAL Delivery Vehicle operations to extend the range of missions.</li><li>• Deployable Media Production Center. Decrease size to enhance transportability of psychological operations' print production equipment.</li><li>• Tactical Communications Management System. A drop-in wireless radio management systems and intercom for use in SOF craft.</li><li>• Hand-held Radar Detector. Provide bearing and identification information to ground based radars.</li><li>• Intraformation Positioning System. All-weather, terrain following, position-keeping and obstacle avoidance capability for both fixed and</li></ul>												

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R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development / Project S200	<p>rotary wing SOF aircraft in formation flight with low probability of detection/intercept.</p> <ul style="list-style-type: none"> <li>● PSYOP Leaflet Payload. Leaflet delivery system to support psychological operations.</li> <li>● SEAL Delivery Vehicle Sound Signalling Device. Device to communicate with submerged swimmers during training exercises.</li> <li>● Ship Systems. Provide enhanced capability to Naval Special Warfare units.</li> <li>● SOF Demolition Kit. Equipment to attach, initiate, and control military effects of explosives for SOF applications.</li> <li>● Special Operations Information Warfare Support System. Automated system for civil affairs and psychological operations information support.</li> <li>● Thermal Imaging Device. Eliminate bore sight problems in ground laser target designation missions.</li> <li>● Transport Cradles. Equipment to transport watercraft in military aircraft.</li> <li>● Weapons Control System. Prototype providing improved accuracy for small arms mounted on SOF water craft.</li> </ul> <p>FY 1994 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>● (\$763K) Transitioned the Active Aiming Module, Assault Zone Survey Equipment, Deployable Media Production Center, Passive Thermal Suppression System, Passive Navigation System, Personnel Evacuation Device, SDV Sound Signalling Device, Ship Systems, Swimmer Navigation Board, Waterproof GPS, and Waterproof Radio.</li> <li>● (\$362K) Completed development of the Craft Identification Friend or Foe, Hand-held Radar Detector, Ranger Anti-Armor Anti-Personnel Weapon System Fire Control, SOF Demolition Kit, and Mobile Broadcast Extender Radio System.</li> </ul>

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		<ul style="list-style-type: none"><li>● (\$448K) Completed analog thermal imaging device and provided it to SOF for evaluation. A digital system is being continued.</li><li>● (\$15,000K) Continued development of Intraformation Positioning System.</li><li>● (\$1,831K) Continued development of Tactical Communications Management System, Transport Cradles, and Weapons Control System.</li><li>● (\$790K) Low Observable Demonstrations. Began development of advanced technology demonstration prototypes of emerging signature reduction and anti-detection technologies.</li><li>● (\$500K) Advanced Sensors. Continued development of advanced sensor prototypes for detecting threat weapon systems and improving reconnaissance and intelligence gathering capabilities. Prototypes under development include a special reconnaissance system for use by Army Special Forces; a head-mounted direction finding system which tracks emanations from threat weapon systems and communications systems; and an improved forward observer, forward air controller system.</li><li>● (\$293) Laser Defense. Began development of laser eye protection for day/night use and night vision goggle hardening.</li><li>● (\$40K) Evaluated a communications helmet. Weight reduction measures are underway to allow use in small boat operations.</li><li>● (\$668K) Inter/Intra Team Low Power Communications. Began prototype development to demonstrate advanced low probability of detection (LPD) techniques and low power communications capability.</li><li>● (\$518K) Decompression Monitor. Began development of advanced decompression monitoring techniques.</li><li>● (\$966K) Began demonstration of Special Operations Information Warfare Support System and PSYOP Leaflet Payload.</li><li>● (\$50K) Initiated efforts to demonstrate technologies for non-lethal incapacitation of personnel under Technology Exploitation Initiatives.</li></ul>	

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FY 1995 PLAN:			
•	(\$689K) Complete evaluation and transition the Mobile Broadcast Extender Radio System, Craft Identification Friend or Foe, and SOF Demolition Kit.		
•	(\$2,489K) Complete the Tactical Communications Management System, Low Observable Demonstrations, Transport Cradles, Thermal Imaging Device, PSYOP Leaflet Payload, and Weapons Control System.		
•	(\$2,308K) Continue development of the Advanced Sensors, Inter/Intra Team Low Power Communications, Special Operations Information Warfare Planning System, Communications Helmet, Decompression Monitor, and Laser Defense.		
•	(\$500K) Begin development of a miniature remote weather station.		
•	(\$721K) Begin technology demonstration of a lightweight outboard motor by integrating advanced materials.		
•	(\$500K) Begin development of enhanced SOF weapon and munition prototypes for increased range, improved accuracy, and improved performance against hardened targets.		
•	(\$512K) Technology Exploitation Initiative. Exploit emerging technology to meet critical SOF requirements and encourage industry and Government lab participation in identifying enhancements to SOF in critical areas. Need in these areas have been advertised to industry and government research and development agencies via Broad Agency Announcements and research and development conferences.		
FY 1996 PLAN:			
•	(\$1,125K) Complete evaluation and transition the Communications Helmet, Drop-in Communications Package Tactical Communications Management System, Laser Defense, Special Operations Information Warfare Support System, and Weapons Control System.		
•	(\$4,050K) Continue efforts on FY 1995 projects to completion of prototype, demonstration, and evaluation. These projects include:		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development / Project S200		
<p>Advanced Sensors, Inter/Intra Team Low Power Communications, Decompression Monitor, Miniature Remote Weather Station, Improved SOF Power Sources, SOF Enhanced Weapons, and Advanced Sniper Weapon Fire Control System.</p> <ul style="list-style-type: none"><li>• (\$2,268K) Conduct advanced technology demonstrations within the following technology areas:<ul style="list-style-type: none"><li>• SOF Survival Sustainment and Personal Equipment. Specifically, a lightweight, low profile, hasty hide shelter to provide SOF personnel with environmental and camouflage protection; and a waterproof, digital camera compatible with photo-multiplier night vision devices and with existing digital transmission equipment.</li><li>• Advanced Technologies for SOF Mobility Platforms. Specifically, technologies to assist SOF aircraft with clandestine landings at night and technologies to integrate current console functions onboard SOF watercraft while protecting the components and improving human factors.</li><li>• Controlled-Effects Weapons Technologies. Specifically, leverage with Service efforts to provide less lethal delivery capabilities onboard SOF aircraft.</li><li>• Advanced Technologies for Deception, Information Warfare. Specifically, technologies to reduce size and improve set-up time requirements of antennae in support of psychological operations transmissions.</li></ul></li><li>• (\$500K) Technology Exploitation Initiative. Exploit emerging technology to meet critical SOF requirements and encourage industry and Government lab participation in identifying enhancements to SOF in critical areas. Need in these areas have been advertised to industry and government research and development agencies via Broad Agency Announcements and research and development conferences.</li></ul>			
FY 1997 PLAN:			
<ul style="list-style-type: none"><li>• (\$8,222K) Continue with development of FY 1996 projects. Initiate new projects resulting in brass boards or studies from the following technology areas: miniaturization, personnel protection, and weight reduction; advanced power sources; advanced SOF mobility platforms; advanced C4 systems and subsystems; mine detection and neutralization; advanced target locating, tracking, and marking;</li></ul>			



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE																														
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		FEBRUARY 1995																														
R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development / Project S200																																
<p>future weapons and enhanced explosive charges and munitions; advanced sensors, optics; and fire control; advanced information warfare and speech translation; and advanced learning, training, and planning.</p>																																
ACQUISITION STRATEGY: NA																																
<p><u>B. Program Change Summary</u></p> <table border="1"> <thead> <tr> <th></th> <th>FY94</th> <th>FY95</th> <th>FY96</th> <th>FY97</th> <th>Total Cost</th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget</td> <td>22.229</td> <td>9.788</td> <td>9.176</td> <td>10.204</td> <td>Cont.</td> </tr> <tr> <td>Appropriated Value</td> <td>22.229</td> <td>7.788</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Adjustments to Appropriated Value / President's Budget</td> <td></td> <td>(.069)</td> <td>(1.233)</td> <td>(1.982)</td> <td></td> </tr> <tr> <td>Current Budget Submit / President's Budget</td> <td>22.229</td> <td>7.719</td> <td>7.943</td> <td>8.222</td> <td>Cont.</td> </tr> </tbody> </table> <p>Change Summary Explanation:</p> <p>Funding: FY 1995 reduction is due to a Congressional cut and a decrease for Congressional reduction of Defensewide RDT&amp;E for travel, civilian pay and a directed Department of Energy reprogramming. FY 1996 and FY 1997 are reductions to fund higher priority efforts and to better align funding with expected obligations/outlays.</p> <p>Schedule: None.</p> <p>Technical: None.</p> <p><u>C. Other Program Funding Summary</u> NA.</p> <p><u>D. Schedule Profile</u> NA.</p>				FY94	FY95	FY96	FY97	Total Cost	Previous President's Budget	22.229	9.788	9.176	10.204	Cont.	Appropriated Value	22.229	7.788				Adjustments to Appropriated Value / President's Budget		(.069)	(1.233)	(1.982)		Current Budget Submit / President's Budget	22.229	7.719	7.943	8.222	Cont.
	FY94	FY95	FY96	FY97	Total Cost																											
Previous President's Budget	22.229	9.788	9.176	10.204	Cont.																											
Appropriated Value	22.229	7.788																														
Adjustments to Appropriated Value / President's Budget		(.069)	(1.233)	(1.982)																												
Current Budget Submit / President's Budget	22.229	7.719	7.943	8.222	Cont.																											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development									
COST (in millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
PE 1160404BB (Special Operations Tactical Systems Dev)		219.672	156.629	101.602	80.789	64.831	102.324	112.071	133.980	Cont.	Cont.
DE14, Joint Special Operations Radio System		2.500	3.062	0	0	0	0	0	0	0	76.876
D476, PSYOPS Advanced Development		.240	3.620	.295	1.095	1.493	14.927	.812	0	0	27.811
D615, SOF Aviation		25.062	0	.945	0	1.393	29.765	12.738	.995	Cont.	Cont.
SF100, Aviation Systems Advanced Development		.300	14.069	7.634	10.676	12.490	14.306	22.777	41.779	Cont.	Cont.
SF200, CV-22 SOF Osprey		14.700	0	0	0	0	0	0	0	0	73.800
S0417, Underwater Systems Advanced Development		40.471	36.497	27.587	13.098	2.212	1.836	2.965	5.060	Cont.	Cont.
S1684, SOF Surface Craft Advanced Development		7.936	.043	5.797	3.054	3.682	2.606	6.279	.721	Cont.	Cont.
3284, SOF Aircraft Defensive Systems		20.940	30.359	12.361	6.778	8.191	4.179	14.011	11.752	Cont.	Cont.
3326, AC-130U		32.821	2.186	6.252	15.031	6.578	1.747	1.472	1.472	6.699	348.326
3642, Aircrew Training System		24.697	38.441	18.410	4.478	.249	.249	0	0	0	208.815
S350, Special Operations Forces Planning and Rehearsal Sys		5.366	2.087	9.653	6.678	5.374	2.786	2.786	2.786	Cont.	Cont.
S375, Weapons and Support Systems Advanced Development		2.226	0	.199	2.298	2.463	1.843	3.640	2.702	Cont.	Cont.
S600, Future SOF Aircraft		0	0	0	0	.464	12.621	21.399	49.260	Cont.	Cont.
S625, SOF Training Systems		0	0	2.488	7.861	7.961	5.473	9.852	1.990	Cont.	Cont.
S650, Quiet Knight		6.969	0	0	0	0	0	0	0	0	6.969
S675, Sustainment Engineering		9.615	13.643	0	0	0	0	0	0	0	24.020

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development									
COST (in millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
S700, Communications Advanced Development		10.332	3.382	1.727	2.333	2.246	2.837	3.022	2.785	Cont.	Cont.
S800, Special Operations Munitions Advanced Development		14.046	9.240	8.254	7.409	10.035	7.149	10.318	12.678	Cont.	Cont.
S900, Miscellaneous Equipment Advanced Development		1.451	0	0	0	0	0	0	0	0	8,414
<p><u>A. Mission Description and Budget Item Justification</u></p> <p>Projects provide for development, testing, and rapid procurement of specialized equipment to meet the unique requirements of Special Operations Forces (SOF). Specialized equipment will permit small, highly trained forces to conduct required operations across the entire spectrum of conflict. These operations are generally conducted in harsh environments, for unspecified periods and in locations requiring small unit autonomy. SOF must infiltrate by land, sea, and air to conduct unconventional warfare, direct action, or deep reconnaissance operations in denied areas against insurgent units, terrorists, or highly sophisticated threat forces. The requirement to operate in denied areas controlled by a sophisticated threat mandates that SOF systems remain technologically superior to threat forces to ensure mission success.</p>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE										FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D476											
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost		
D476, PSYOP Advanced Development		.240	3.620	.295	1.095	1.493	14.927	.812	0	0	27.811		

A. Mission Description and Budget Item Justification

The intent of Psychological Operations (PSYOP) is to persuade selected target audiences to support US national interests and to counter misinformation directed at US forces. Equipment deficiencies exist which seriously threaten the ability of USSOCOM forces to produce and disseminate PSYOP products. This project resources a level of effort to replace much of the 1950s and 1960s technology equipment currently employed and to provide enhanced capability to conduct tactical and theater level PSYOP dissemination in support of regional unified commanders and their deployed task forces. Sub-projects include:

- Deployable Print Production Center (DPPC). DPPC is a rapidly deployable, state-of-the-art computerized digital system capable of creating, editing and producing printed PSYOP products in forward locations and remote sites.
- Family of Loudspeakers (FOL). The FOL will be deployed by PSYOP Loudspeaker Teams and Mobile Audio/Visual Teams to target areas in support of Special Operations Forces and conventional forces. FOL will permit the conduct of loudspeaker missions over larger areas than present equipment capability allows and will provide a greater stand-off distance for US forces/assets. The FOL will consist of modular amplifiers and speakers that can be interconnected to form sets of loudspeakers that will provide high quality recorded audio, live dissemination, and limited acoustic deception capability. Amplifiers and speakers will be transported, operated, and mounted in ground vehicles, watercraft, rotary wing aircraft, and dismounted for ground operations (tripod/manpack). The basic system, or manpack, is comprised of a modular amplifier and modular speaker(s) weighing 35 lbs or less.
- Leaflet Delivery Systems (LDS). LDS develops a family of leaflet delivery systems, primarily non-development acquisitions which will provide PSYOP personnel the ability to disseminate large quantities of leaflets in a wide range of scenarios including denied areas. LDS will be non-lethal, low radar cross-section systems which will not present a military threat that could provoke hostilities. LDS will provide overt and deniable methods of leaflet dissemination to be utilized across the operational continuum. One system currently

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE
FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D476
<p>available off-the-shelf consists of two subsystems: dissemination and launch. The dissemination subsystem will consist of a balloon carrier/vehicle and a leaflet release device capable of being preprogrammed for altitude release point. The launch subsystem will provide for logistical and weather programming. LDS will also include technologically advanced methods of leaflet dissemination, including unmanned aerial vehicle (UAV) payloads.</p> <ul style="list-style-type: none"> <li>Special Operations Media System (SOMS) A. SOMS A is an extended range strategic / operational level radio / TV broadcast system, based on experience gained with the tactical SOMS B. SOMS B is capable of disseminating Psychological Operations (PSYOP) products to a theater-wide audience. SOMS A will record, produce and broadcast PSYOP products and transmit / receive programming material via satellite communications with the fixed-site media production center, tactical SOMS B systems and Commando Solo aircraft. Satellite communications will be used to obtain rapid approval of PSYOP products for dissemination in response to quickly changing mission scenarios, to forward products produced and approved in the continental United States to SOMS A for dissemination.</li> </ul> <p>FY 1994 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>(\$240K) Family of Loudspeakers (FOL). Milestone I/II approved on 23 June 1994; refined system design; finalized Request for Proposal (RFP) to acquire test articles with options for production.</li> </ul> <p>FY 1995 PLAN:</p> <ul style="list-style-type: none"> <li>(\$3,620K) FOL. Demonstrate/validate critical technologies; release RFP to industry; conduct source selection evaluation board and award contract to acquire test articles with option for production.</li> </ul> <p>FY 1996 PLAN:</p> <ul style="list-style-type: none"> <li>(\$295K) Deployable Print Production Center (DPPC). Conduct surveys, evaluate non-developmental item equipment, and conduct Milestone I/III reviews, based on operator evaluation of the DPPC hardware developed as a Special Operations Special Technology project.</li> </ul>	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D476		
FY 1997 PLAN:			
<ul style="list-style-type: none"> <li>• (\$896K) Special Operations Media System (SOMS) A. Begin research and development efforts with analysis of SOMS B lessons learned and survey of available non-developmental item equipment. Conduct Milestone 0/I reviews.</li> <li>• (\$199K) Leaflet Delivery System. Conduct market survey to determine potential vendors and potential proof-of-concept. Initiate documentation required for MS 0/II decision.</li> </ul>			
ACQUISITION STRATEGY: NA.			
B. <u>Program Change Summary</u>			
Previous President's Budget	FY94	FY95	FY97
Appropriated Value	.240	3.653	Total Cost
Adjustments to Appropriated Value / President's Budget	.240	3.653	12.723
Current Budget Submit / President's Budget	.240	(.033)	
Change Summary Explanation:			
Funding:	This project contains several sub-projects. FY 1995 decrease is for Congressional reduction of Defensewide RDT&E for travel, civilian pay and a directed Department of Energy reprogramming. Increases in both FY 1996-1997 are due to new start PSYOP developments. FY 1996 funding increased for the Deployable Print Production Center. The FY 1997 funding increased for the Leaflet Delivery System and for the Special Operations Media System A.		
Schedule:	None.		
Technical:	None.		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		FEBRUARY 1995			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D476												
C. <u>Other Program Funding Summary</u>															
PROC, Psyop Equipment			FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	To Complete	Total Cost			
			6.471	7.823	28.106	5.768	2.613	4.951	8.247	10.385	Cont.	Cont.			
D. <u>Schedule Profile</u>															
Special Ops Media System (SOMS) B															
MS II															
MS III															
Family of Loudspeakers															
MS I/II															
MS III															
Deployable Print Production Center															
MS 0															
MS I/III															
SOMS A MS 0/I															
Leaflet Delivery System MS 0/II															

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project D476		
A. <u>Project Cost Breakdown</u> (\$ in thousands)	<u>FY94</u>	<u>FY95</u>	<u>FY96</u> <u>FY97</u>
1. Family of Loudspeakers	240	3,620	
2. Deployable Print Production Center		295	
3. Leaflet Delivery System			199
4. Special Operations Media System - A			896
TOTAL:	240	3,620	295 1,095



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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7					R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project D476								
B. Budget Acquisition History and Planning Information													
Performing Organizations													
Actual or Budget Value (\$ in thousands)													
Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Product Development Organizations USSOCOM, Tampa FL Navy, OST, Ft Washington MD Army, CECOM, Ft Monmouth NJ DOE, Nat'l Engr Lab, Idaho Falls ID	WR	Var											
	ALLOT	Jun 96			1,670	240	3,620	295	896	16,834	17,730		
	ALLOT	Var			3,240				199	398	295		
	MIPR	May 93									6,127		
Support and Management Organizations Army MRSA, Lexington KY AMC LSA, Redstone Arsenal AL	MIPR	May 93			53						53		
	MIPR	Apr 94			161						161		
Test and Evaluation Organizations JITC, Ft Huachuca AZ Army CSTA, Aberdeen Proving Gd MD	MIPR	Mar 94			202						202		
	MIPR	Aug 94			3						3		
Government Furnished Property													
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Subtotal Product Development					4,910	240	3,620	295	1,095	17,232	27,392		
Subtotal Support and Management					214						214		
Subtotal Test and Evaluation					205						205		
Total Project					5,329	240	3,620	295	1,095	17,232	27,811		

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Exhibit R-3

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		FEBRUARY 1995							
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D615									
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
D615, SOF Aviation		25.062		.945		1.393	29.765	12.738	.995	Cont.	Cont.
<p><b>A. <u>Mission Description and Budget Item Justification</u></b></p> <p>A requirement exists to provide aviation support to Special Operations Forces (SOF) in world-wide contingency operations and low-intensity conflicts. The specialized aircraft for these missions must be capable of rapid deployment and undetected penetration of hostile areas. These aircraft must be capable of operating at extended ranges under adverse weather conditions to infiltrate, provide logistics for, reinforce, and extract SOF. The threat is characterized by an extensive and sophisticated ground based air defense system and an upgraded air-to-air capability targeted against helicopters. Third World operations are apt to involve greater distances and more challenging geographical environmental conditions than the European theater. This project will develop/upgrade the Special Operations rotary wing aircraft systems that will be capable of successful operations in these increasingly hostile environments. Rotary wing systems supported by this project include: MH-60G/L/K, MH-53J, TH-53A, and MH-47D/E. Efforts include:</p> <ul style="list-style-type: none"> <li>• MH-47E/MH-60K. Develop and integrate Multi-Mode Radar (MMR) software.</li> <li>• MH-53J. (1) Upgrade the lamp for the ALQ-157 Infrared Countermeasures Set; (2) Develop and install software and hardware interfaces to allow flight line reprogramming of the ALQ-162 Electronic Countermeasures Jammer.</li> </ul> <p><b>FY 1994 ACCOMPLISHMENTS:</b></p> <ul style="list-style-type: none"> <li>• (\$22,062K) MH-47E/MH-60K. Commenced effort to verify software developed for the MMR capability.</li> <li>• (\$3,000K) MH-47E/MH-60K. Initiated Edwards Air Force Base flight tests.</li> </ul> <p><b>FY 1995 PLAN:</b></p> <ul style="list-style-type: none"> <li>• Complete MMR flight test qualification at Edwards Air Force Base.</li> </ul>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
R-1 ITEM NOMENCLATURE / PROJECT NO.		FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	PE 1160404BB Special Operations Tactical Systems Development / Project D615	
<ul style="list-style-type: none"> <li>• Achieve aircraft fielding/material release.</li> </ul>		
FY 1996 PLAN:		
<ul style="list-style-type: none"> <li>• (\$545K) MH-53J. Develop improved infrared lamp for the ALQ-157 Infrared Countermeasures Set. Improved lamps will be introduced on an attrition basis.</li> <li>• (\$400K) MH-53J. Develop software and hardware interfaces to allow flight line reprogramming of ALQ-162 Electronic Countermeasure Jammers.</li> </ul>		
FY 1997 PLAN: None.		
ACQUISITION STRATEGY: NA.		
B. <u>Program Change Summary</u>		
Previous President's Budget	FY94	FY95
Appropriated Value	19.181	FY96
Adjustments to Appropriated Value / President's Budget	5.881	FY97
Current Budget Submit / President's Budget	25.062	Total Cost
Change Summary Explanation:		Cont.
Funding:	FY 1994 increase required to complete testing of the Multi-Mode Radar for the MH-47E/MH-60K program. FY 1996 increase addresses MH-53J requirement for upgrade to the ALQ-157 and development of software and hardware interfaces for reprogramming ALQ-162 systems.	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		FEBRUARY 1995			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7						R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D615									
Schedule:		None.													
Technical:		None.													
C. <u>Other Program Funding Summary</u>															
		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	To Complete	Total Cost				
PROC, HH-53		12.425	6.790												
PROC, 47/60 Mods		7.603	10.591												
PROC, Rot. Wing Upgds & Sustainment				9.042	4.939	4.929	19.753	65.330	71.699	Cont.	Cont.				
D. <u>Schedule Profile</u>															
		FY94		FY95			FY96		FY97						
		1	2	3	4	1	2	3	4	1	2	3	4		
ALQ-157 Contract Award								x							
ALQ-162 Contract Award								x							
ALQ-162 Install										x					

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project D615		
A. <u>Project Cost Breakdown</u> (\$ in thousands)	<u>FY94</u>	<u>FY95</u>	<u>FY96</u> <u>FY97</u>
1. ALQ-157			545
2. ALQ-162			400
3. MH-47E / MH-60K			
Testing	3,000		
Multi-Mode Radar Software	22,062		
TOTAL:	<u>25,062</u>	<u>0</u>	<u>945</u> <u>0</u>

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7				R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project D615									
B. Budget Acquisition History and Planning Information													
Performing Organizations													
Actual or Budget Value (\$ in thousands)													
Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Product Development Organizations ALQ-157, WR-ALC ALQ-162, WR-ALC, NAS	Var	Var						405			405		
	Var	Var						260			260		
Support and Management Organizations ALQ-157, WR-ALC ALQ-162, WR-ALC	Var	Var						110			110		
	Var	Var						90			90		
Test and Evaluation Organizations ALQ-157, SMOTEC ALQ-162, SMOTEC	Var	Var						30			30		
	Var	Var						50			50		
Government Furnished Property													
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Subtotal Product Development								665			665		
Subtotal Support and Management								200			200		
Subtotal Test and Evaluation								80			80		
Total Project								945			945		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE		FEBRUARY 1995				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100									
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
SF100, Aviation Systems Advanced Development		.300	14.069	7.634	10.676	12.490	14.306	22.777	41.779	Cont.	Cont.
A. <u>Mission Description and Budget Item Justification</u>											
<p>This project investigates already developed and maturing technologies that have direct application for the development and procurement of specialized equipment to meet unique SOF aviation requirements. Timely application of SOF-unique technology is critical and necessary to meet requirements in such areas as: Low Probability of Intercept/Low Probability of Detection (LPI/LPD); radio frequency radar; LPI formation/rendezvous flight; digital terrain elevation data and electronic order of battle; digital maps; LPI radar altimeter; display technology; situational awareness; near-real-time intelligence to include data fusion; laser radar/millimeter wave radar obstacle avoidance; imagery; threat detection and avoidance; electronic support measures for threat geolocation and specific emitter identification; navigation; target detection and identification technologies; light detection and ranging ballistic wind measurement technologies; and studies for future SOF aircraft requirements. Sub-projects include:</p>											
<ul style="list-style-type: none"><li>● AC-130H Light Detection and Ranging (LIDAR). Improves fire control system accuracy by integrating a doppler LIDAR wind sensor that provides a three dimensional wind profile.</li><li>● AC-130H Low Light Level TV (LLTV) Replacement. The LLTV replacement will correct existing LLTV deficiencies caused by obsolete parts. LLTV is the mission-essential sensor that provides target acquisition and firing accuracy for the AC-130H.</li><li>● AN/AAQ-17 Infrared Detection Set Upgrade. The upgraded AN/AAQ-17 for the AC-130H will have substantially increased capability to identify friendlies and targets while operating outside of the threat range by adding field of view and greater stand-off range.</li><li>● Low Probability of Intercept Penetration Aids (LPI PenAids). Selected technologies will be validated by the SOF Advanced Concept Technology Demonstration (ACTD) as approved by the Deputy Under Secretary of Defense for Advanced Technology on 19 August 1994. The ACTD leverages other DoD efforts to complete flight demonstration. It will provide an acquisition path to expedite the fielding of successfully demonstrated technologies by leveraging off of other DoD projects.</li></ul>											



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995
R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	<ul style="list-style-type: none"> <li>Aviation Engineering Analysis. Provides a rapid response capability to support SOF fixed wing aircraft. The purpose is to correct systems deficiencies, improve asset life, and enhance mission capability through the means of feasibility studies and engineering analyses. The sub-project provides the engineering required to improve the design and performance integrity of the aircraft support systems, sub-systems equipment, and embedded computer software as they relate to the maintenance, overhaul, repair, quality assurance, modifications, material improvements and service life extensions. Prior to FY 1996 aviation engineering analysis was funded in RDT&amp;E project S675, Sustainment Engineering.</li> </ul>		
FY 1994 ACCOMPLISHMENTS:			
<ul style="list-style-type: none"> <li>(\$300K) Initiated AN/AAQ-17 preliminary design for the AC-130H.</li> </ul>			
FY 1995 PLAN:			
<ul style="list-style-type: none"> <li>(\$1,444K) Conduct Low Probability of Intercept Penetration Aids (LPI Pen aids) avionics architecture evaluation, study and analysis for off/on board sensors, displays, and systems.</li> <li>(\$7,427K) Develop proposed LPI Pen aids acquisition strategy and initial program objectives for cost, schedule, and performance for navigation and radar enhancements.</li> <li>(\$5,198K) Award non-recurring engineering contract for design of the enhanced AN/AAQ-17 for the AC-130H.</li> </ul>			
FY 1996 PLAN:			
<ul style="list-style-type: none"> <li>(\$2,004K) Complete LPI Pen aids proposed acquisition strategy, avionics and systems specifications, integrated logistics support plans, program cost estimates and develop alternatives for Cost and Operational Effectiveness Analysis (COEA). Complete evaluation of DoD inventoried systems and systems currently under development within DoD and other government agencies for suitability to meet SOF needs.</li> </ul>			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	FEBRUARY 1995
<p data-bbox="357 86 357 1239">R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100</p> <ul style="list-style-type: none"> <li>● (\$1,000K) Award Low Probability of Intercept Penetration Aids (LPI Pen aids) non-recurring engineering contract for design of advanced flight demonstration effort.</li> <li>● (\$500K) Initiate COEA effort for LPI Pen aids.</li> <li>● (\$2,985K) Conduct Milestone 0 and initiate Milestone I/II Review for Light Detection and Ranging (LIDAR).</li> <li>● (\$1,145K) Continue aviation engineering analyses of SOF fixed wing aircraft avionics and sensors.</li> </ul> <p data-bbox="722 1780 755 1984">FY 1997 PLAN:</p> <ul style="list-style-type: none"> <li>● (\$2,070K) Complete LPI Pen aids COEA effort and finalize system specification and acquisition strategy.</li> <li>● (\$2,570K) Award LPI Pen aids development contract for design and fabrication of aircraft installation kit for the advanced flight demonstration.</li> <li>● (\$2,303K) Complete Milestone I/II and prepare for Milestone III Review for Light Detection and Ranging (LIDAR).</li> <li>● (\$309K) Conduct a study and analysis for various preplanned product improvements to the AC-130U Gunship.</li> <li>● (\$1,423K) Award a development contract for design of an enhanced ASQ-145 Low Light Level Television system.</li> <li>● (\$2,001K) Continue engineering analyses of SOF fixed wing aircraft avionics and sensors.</li> </ul>	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100					
<p>ACQUISITION STRATEGY:</p> <ul style="list-style-type: none"> <li>AC-130 LIDAR. Compete Phase II demonstration contract and flight test proposed solution(s) then, award a competitive contract for engineering and manufacturing development (EMD).</li> <li>AC-130H Low Light Level TV. Award a sole source contract for EMD with follow-on production options.</li> <li>LPI Penetration Aids. The SOF Advanced Concepts Technology Demonstration (ACTD) builds upon successfully demonstrated technologies in the Balanced Technology Initiative (BTI) Quiet Knight Phase I/II flight demonstration efforts. The BTI contract was sole source. Proposed acquisition strategy is to continue with the same government and contractor team and use the same contractual vehicles in order to maintain project continuity and minimize program risk. Full and open competition is required following ACTD completion to enter into EMD.</li> </ul>						
B. <u>Program Change Summary</u>		FY94	FY95	FY96	FY97	Total Cost
Previous President's Budget		0	8.213	5.788	3.706	Cont.
Appropriated Value			14.069			
Adjustments to Appropriated Value / President's Budget		.300		1.846	6.970	
Current Budget Submit		.300	14.069	7.634	10.676	Cont.
Change Summary Explanation:						
Funding:		FY 1994 increase is a Congressionally approved reprogramming to initiate preliminary design of AN/AAQ-17 Infrared Detection Set Upgrade for the AC-130H. FY 1996 and FY 1997 increases are to fund completion of Low Probability of Intercept Penetration Aids COEA, continue the advanced concepts technology demonstration, and to fund engineering studies and analyses.				
Schedule:		None.				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE										FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100											
Technical: None.												
C. <u>Other Program Funding Summary</u>		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	To Complete	Total Cost	
PROC, C-130 Mods*			3.042	15.225	3.284	6.848	11.245	18.389	14.896	Cont.	Cont.	
PROC, Spares & Repair Parts**				.100	.326	.289	.243	.030	0	0	.985	
* Includes C-130 Modifications sub-line item funds for AN/AAQ-17 Infrared Detection Set (IDS) Upgrade for the AC-130H, AC-130H Light Detection and Ranging (LIDAR), AC-130H Low Light Level Television replacement, and AC-130U P31.												
** Includes initial spares for AC-130H LIDAR and AN/AAQ-17 IDS upgrade for the AC-130H.												
D. <u>Schedule Profile</u>												
LPI Penails (Adv Concept Tech Demo)												
Milestone 0												
Milestone I												
Complete Design/Fabrication												
Complete Flight Test												
LIDAR MS I/II												
LLTV Replacement Development CA												
AN/AAQ-17 Contract Award												
AN/AAQ-17 FOC												

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project SF100		
A. <u>Project Cost Breakdown</u> (\$ in thousands)		<u>FY94</u>	<u>FY95</u>
		<u>FY96</u>	<u>FY97</u>
1. AC-130H LIDAR		2,985	2,303
2. AC-130H Low Light Level TV Replacement			1,423
3. AC-130U P3I			309
5. AN/AAQ-17	300	5,198	
6. LPI Penails		8,871	4,640
7. SOF Aviation Engineering Analyses		1,145	2,001
<b>TOTAL:</b>		<u>300</u>	<u>14,069</u>
		<u>7,634</u>	<u>10,676</u>

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE						PE 1160404BB Special Operations Tactical Systems Development / SF100			
RDT&E, DEFENSEWIDE / 7													
B. Budget Acquisition History and Planning Information													
Performing Organizations													
Actual or Budget Value (\$ in thousands)													
Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Product Development Organizations Texas Instruments (AN/AAQ-17) TBD Contractor (LPI Penada) TBD Contractor (LIDAR) TBD Contractor (LLLTV) Various	SS/CPFF	Apr 95	5,198	5,198			5,198						
	SS/FP	Oct 95		TBD			7,427	3,004	2,570				
	TBD	Mar 97		3,914				2,985	2,303				
	TBD	Mar 97		1,423					1,423				
	Various				3,007	300		1,145	2,310	Cont.	Cont.		
Support and Management Organizations Booz Allen Hamilton (LPI Penada)	C/CPFF	Jan 95					1,444	500	2,070	Cont.	Cont.		
Test and Evaluation Organizations													
Government Furnished Property													
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Subtotal Product Development					3,007	300	12,625	7,134	8,606				
Subtotal Support and Management							1,444	500	2,070				
Subtotal Test and Evaluation													
Total Project					3,007	300	14,069	7,634	10,676	Cont.	Cont.		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		FEBRUARY 1995							
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417									
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
S0417, Underwater Systems Advanced Development		40.471	36.497	27.587	13.098	2.212	1.836	2.965	5.060	Cont.	Cont.

Name Change: Project formerly called "SEAL Support Systems"

#### A. Mission Description and Budget Item Justification

This project funds the development of SEAL support items used during the conduct of hydrographic / inland reconnaissance, beach obstacle clearance, underwater ship attack, and other direct action missions. Sub-projects include:

- Advanced SEAL Delivery System (ASDS). The ASDS is a manned combatant submersible capable of delivering SOF personnel and weapons in a high threat environment. The ASDS will provide the requisite range, endurance, payload, and other capabilities for operation in the full range of threat environments.
- MK 8 Mod 1 SEAL Delivery Vehicle (SDV). This program upgrades and extends the service life of aging MK 8 SDVs; the MK 8s were built with 1960s technology. The new MK 8 Mod 1 SDV will incorporate more modern equipment to improve supportability / maintainability and will include upgrade of selected subsystems. The program was renamed MK 8 Mod 1 to more accurately reflect its nature as a Service Life Extension Program rather than a new, in-depth Research, Development, and Acquisition program.
- Undersea Systems. Undersea systems to be developed to provide SOF combat swimmers with the necessary diving and diving related equipment to fulfill assigned underwater combat missions include the following:
  - Diver Active Thermal Protection System. Development of self-contained active thermal protection system which allows combat swimmers to conduct missions in extreme cold water environments.
  - Navy Special Warfare Mine Countermeasures (NSWMCM). Phased development / improvement of low magnetic and acoustic signature equipment to support the combat swimmer in the NSWMCM operational environment.



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
RDT&E BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417
<ul style="list-style-type: none"> <li>• Miniaturized Underwater Global Positioning System (GPS) Receiver (MUGR). Development of a waterproof, miniaturized, GPS unit for combat swimmers. This program transitioned from a Special Operations Special Technology effort.</li> <li>• MK-24 Full Face Mask. Upgrade the current MK-24 Full Face Mask to incorporate a drinking tube to allow operators to rehydrate underway during mission.</li> <li>• Non-Gasoline Burning Outboard Engine. Development of an outboard engine, for SOF use, which does not use highly volatile gasoline.</li> </ul>		
FY 1994 ACCOMPLISHMENTS:		
<ul style="list-style-type: none"> <li>• (\$27,137K) Advanced SEAL Delivery System (ASDS). Completed Phase I Cost and Operational Effectiveness Analysis, released Request for Proposal, evaluated competing designs, obtained Milestone II approval, and awarded Detailed Design/Manufacturing Development contract to one of the competing preliminary designers.</li> <li>• (\$9,811K) MK 8 Mod I SEAL Delivery Vehicle (SDV). Completed design, integration, and testing of subsystem sustainment and selected upgrade Engineering Change Proposals (ECPs) for the Service Life Extension Program. Completed all ECP design and integration packages in preparation for procurement and start of conversions in FY 1995.</li> <li>• (\$1,472K) Diver Active Thermal Protection System. Continued Phase 2 Engineering and Manufacturing Development.</li> <li>• (\$1,620K) Naval Special Warfare Mine Countermeasures. Continued Phase 0 concept exploration and definition.</li> <li>• (\$431K) MUGR. Completed Milestone I/II and continued prototype engineering development, integrated logistics support documentation, and development testing.</li> </ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE
RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417
<p>FY 1995 PLAN:</p> <ul style="list-style-type: none"> <li>• (\$31,813K) Advanced SEAL Delivery System (ASDS). Complete Critical Design Review and begin fabrication and integration of first vehicle.</li> <li>• (\$2,282K) MK 8 Mod 1 SEAL Delivery Vehicle. Complete system level testing, develop training modifications, procure initial conversion kits and begin conversion/overhaul of MK 8 Mod 0 SDVs.</li> <li>• (\$584K) Diver Active Thermal Protection System. Continue interface with MK 8 Mod 1 SDV Service Life Extension Program, program documentation, and complete operational evaluation.</li> <li>• (\$1,798K) Naval Special Warfare Mine Countermeasures (NSWMCM). Complete Milestone I and commence Phase I demonstration and validation of low signature combat rubber raiding craft.</li> <li>• (\$20K) Miniature Underwater Global Positioning System Receiver. Complete operational testing and milestone III.</li> </ul> <p>FY 1996 PLAN:</p> <ul style="list-style-type: none"> <li>• (\$24,670K) ASDS. Complete fabrication and integration of the first ASDS and begin system level testing.</li> <li>• (\$2,369K) NSWMCM. Complete Phase I Demonstration and Validation, complete Milestone II, and commence Phase II Engineering and Manufacturing Development for low signature craft. Continue Phase 0 development of sensor navigation system and remote firing device.</li> <li>• (\$50K) MK-24 Full Face Mask. Begin development for a drinking tube upgrade to the MK-24.</li> <li>• (\$498K) Non-Gasoline Burning Outboard Engine. Award contract for prototype engine.</li> </ul>	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		FEBRUARY 1995
R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417		
<p><b>FY 1997 PLAN:</b></p> <ul style="list-style-type: none"> <li>• (\$9,805K) Advanced SEAL Delivery System (ASDS). Complete system level testing. Conduct in-water trials, training of Navy crews, and perform simulated missions.</li> <li>• (\$2,696K) Naval Special Warfare Mine Countermeasures (NSWMCM). Complete Milestone III for low signature craft. Continue Phase 0 development of sensor navigation system and remote firing device.</li> <li>• (\$199K) MK-24 Full Face Mask. Complete development of drinking tube upgrade.</li> <li>• (\$398K) Non-Gasoline Burning Engine. Complete development of prototype engine (incremental funding). Initiate testing of prototype engine in the 4th quarter (September, 1997).</li> </ul> <p><b>ACQUISITION STRATEGY:</b></p> <ul style="list-style-type: none"> <li>• ASDS. To select three qualified companies to develop independent preliminary designs. Following completion of the preliminary design efforts, a request for proposal for the engineering and manufacturing development (EMD) contract was released to these companies for proposal submittal for the design, fabrication, and test of the first ASDS. A single contractor will be selected based on a best value source selection process. The selected contractor will also construct the production systems as phased pricing options in the ASDS EMD contract.</li> <li>• MK 8 Mod 1 SEAL Delivery Vehicle (SDV). To develop a series of hardware modifications using a combination of off-the-shelf equipment and in-house Navy and contractor developed hardware, integrated by the SDV design agent. Beginning in FY 1995, procurement funds will be used to purchase and install modifications via a combination of competitive and sole source contracts to be awarded by In-Service Engineering Agent.</li> <li>• NSWMCM. Conduct competing development and design contracts between industry and Navy labs to determine the best product and then award follow-on contract for production.</li> </ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995		
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417				
<u>B. Program Change Summary</u>		FY94	FY95	FY96	FY97
Previous President's Budget		38.845	30.454	22.284	10.059
Appropriated Value		38.845	30.454		
Adjustments to Appropriated Value / President's Budget		1.626	6.043	5.303	3.039
Current Budget Submit		40.471	36.497	27.587	13.098
					117.653
Change Summary Explanation:					
Funding:	FY 1994 adjustments are for Advanced SEAL Delivery System (ASDS) plus-up to address first article shortfall and program growth and reduction for Small Business Innovative Research program. Funding transferred from Sub-Conversion procurement for the ASDS program into RDT&E for FY 1995-1997. Other adjustments include restructure due to outlay rates, travel reductions, and inflation reductions. In addition, FY 1996 and FY 1997 increase due to plus-up for ASDS to conduct full performance level testing.				
Schedule:	None.				
Technical:	None.				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)						DATE		FEBRUARY 1995			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417									
C. <u>Other Program Funding Summary</u>											
		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	To Complete	Total Cost
ASDS											
PROC, ASDS						66.062	1.219	2.438	4.229	Cont.	Cont. 4.390
PROC, ASDS Adv Proc					4.390						
MK 8 Mod 1 SDV											
PROC MK8 Mod 1 SDV		11.822	11.115	9.610	6.292	2.677					41.516
DATPS											
PROC, Maritime Equip.		6.764									6.764
NSWMCM											
PROC, Maritime Equip.			.570	1.659	7.343	7.650	3.013	2.416	Cont.	Cont.	
MUGR											
PROC, Maritime Equip.		1.208									1.208
PROC, Spares and Repair Parts				1.791	1.791						3.582
NBOE											
PROC, Maritime Equip.			.249	2.388	.995	1.020	Cont.	Cont.	Cont.	Cont.	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE												FEBRUARY 1995											
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417																							
		FY94			FY95			FY96			FY97														
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
D. Schedule Profile																									
Advanced SEAL Delivery System																									
Milestone II and Contract Award					x																				
Complete Critical Design Reviews										x															
Start Testing First Unit																	x								
Deliver First Unit																									
MK 8 Mod 1 SEAL Delivery Vehicle (SDV)																									
Begin Procurement of Conversion Kits						x																			
Commence Overhaul/Conversion													x												
Complete Test and Evaluation																									
Naval Special Warfare Mine Countermeasures																									
Combat Rubber Raiding Craft MS I																									
Combat Rubber Raiding Craft MS II																									
Diver Active Thermal Protective System																									
OPEVAL																									
MS III																									
MK-24 Full Face Mask																									
Complete Development																									
Complete T&E																									
Install Upgrade Kits																									
Non-Gasoline Burning Engine																									
Milestone 0/I																									
Contract EDMs																									
DT I																									

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE PE 1140404BB Special Operations Tactical Systems Development / Project S0417		
		FY94	FY95
A. <u>Project Cost Breakdown</u> (\$ in thousands)			FY97
1. Advanced SEAL Delivery System			
Detailed Design / Manufacturing Development		26,287	31,213
Program Management Office Support		850	600
2. MK 8 Mod 1 SEAL Delivery Vehicle			
System Engineering		9,811	
Developmental Test and Evaluation			2,055
Program Management Office Support			227
3. Other Undersea Systems			
Diver Active Thermal Prot Sys (DATPS) Development		1,400	474
DATPS Program Management Office Support		72	60
DATPS OT&E			50
Naval Special Warfare Mine Countermeasures (NSWCMCM) Engineering and Manufacturing Dev.		1,397	1,648
NSWCMCM Program Management Office Spt / Test		223	150
Miniature Underwater GPS Receiver (MUGR) Dev.		306	
MUGR Program Management Office Support / Test		125	20
MK-24 Full Face Mask DT&E			40
MK-24 Program Management Support			10
MK-24 OT&E			20
Non-Gasoline Burning Outboard Engine Development			498
TOTAL:		40,471	36,497
			27,587
			13,098

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE								
RDT&E, DEFENSEWIDE / 7					PE 1160404BB Special Operations Tactical Systems Development / Project S0417								
B. Budget Acquisition History and Planning Information													
Performing Organizations													
Actual or Budget Value (\$ in thousands)													
Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Product Development Organizations													
ASDS, TBD	C/CPIF	Various				26,287	31,213	23,970	9,105		90,575		
SDV, NSWC, Dahlgren	WR	Various				9,664	2,055				11,719		
NSWCMC, TBD	Various	Jan-May 95				1,397	1,648	2,169	2,496		7,710		
DATPS, Coastal Systems Station (CSS)	Various	Various				1,000	100				1,100		
MUGR, CSS	Various	Various				200		40	130		200		
MK-24, CSS	Various	Various									170		
Support and Management Organizations													
ASDS, NAVSEASYSKOM	WR	Various				850	600	700	700		2,850		
SDV, NAVSEASYSKOM	WR	Various				147	227				374		
DATPS, NAVSEASYSKOM	WR	Various				72	70				142		
NSWCMC, NAVSEASYSKOM	WR	Various				223	150	200	200		773		
MUGR, CSS	WR	Various				125					125		
MK-24, CSS	WR	Various						10	49		59		
NBOE, CSS	WR	Various						100	100		200		
Test and Evaluation Organizations													
DATPS, CSS, OPTEVFOR						400	414				814		
MUGR, CSS						106	20				126		
NBOE, NAVSEASYSKOM								398	298		696		
MK-24, CSS, NEDU									20		20		
Government Furnished Property													
Item Description	Contract Methd/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
None													
Subtotal Product Development						38,548	35,016	26,179	11,731		111,474		
Subtotal Support and Management						1,417	1,047	1,010	1,049		4,523		
Subtotal Test and Evaluation						506	434	398	318		1,656		
Total Project						40,471	36,497	27,587	13,098		117,653		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE		FEBRUARY 1995					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S1684									
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
S1684, SOF Surface Craft Advanced Development		7.936	.043	5.797	3.054	3.682	2.606	6.279	.721	Cont.	Cont.
Name Change: Project formerly called "Special Warfare Combatant Craft"											
A. <u>Mission Description and Budget Item Justification</u>											
This project provides for development and testing of surface combatant craft and selected items of specialized equipment to meet the unique requirements of Special Operations Forces (SOF). These craft and equipment will permit small, highly trained forces to conduct required operations across the entire spectrum of conflict. Sub-projects include:											
<ul style="list-style-type: none"><li>● Navy Boat Program. This program provides engineering support for design and specification development for combatant craft and craft subsystems. This will result in improved operability and safety, reduced detectability, and increased survivability for inflatable boats, rigid inflatable boats (RIBs), and other combatant craft.</li><li>● Patrol Coastal (PC). The need for a coastal patrol and interdiction combatant craft capability was validated during operation "Earnest Will" in the Persian Gulf and increased commitments supporting missions both in CONUS and the SOUTHCOM area of responsibility. The 170 foot PC design incorporates space, weight and power margins to accommodate improvements such as advanced lightweight weapon systems. A non-developmental item surface-to-surface missile system for ship self-defense will be funded incrementally in FY 1996 and FY 1997 for FY 1998 installation and testing.</li><li>● MK V Special Operations Craft (MK V SOC). The MK V SOC will provide a fast, rapidly deployable, air-transportable, and reliable combatant craft to be used primarily for medium range SEAL insertion/extraction tasks and limited coastal patrol and interdiction missions.</li></ul>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		FEBRUARY 1995
R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S1684		
FY 1994 ACCOMPLISHMENTS:		
<ul style="list-style-type: none"> <li>• (\$112K) Navy Boat Program. Completed developmental testing for 10-meter Rigid Inflatable Boat.</li> <li>• (\$203K) Patrol Coastal (PC). Continued pre-planned product improvements (P3I), command and control studies, and software development.</li> <li>• (\$350K) PC. Continued propeller redesign development and noise reduction efforts.</li> <li>• (\$5,213K) PC. Continued PC weapons upgrade to include: Stabilized Weapons Platform System program and technical support, assembly and testing of the MK 96 Gun System, and conducted surface-to-surface missile studies.</li> <li>• (\$2,058K) MK V Special Operations Craft (SOC). Received test articles and conducted Development Testing and Evaluation and Early Operational Assessment. Reached Milestone II and awarded production contract. Continued Interactive Electronic Technical Manual technology applications project.</li> </ul>		
FY 1995 PLAN:		
<ul style="list-style-type: none"> <li>• PC. Continue propeller redesign effort and prototype testing and procure, install, and test active noise cancellation system.</li> <li>• PC. Continue P3I effort to include version 2 software development for command and control.</li> <li>• PC. Continue P3I weapons upgrade through completion of market survey of NDI missile systems, a mission analysis, a ship interface study, and a cost and operational effectiveness analysis.</li> <li>• PC. Conduct PRIVATEER Developmental Test / Operational Test.</li> <li>• (\$43K) MK V Special Operations Craft (SOC). Continue program, conduct technical/operational evaluations and reach Milestone III.</li> </ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S1684		
<p>Proceed with pre-planned product improvement efforts to integrate government furnished weapons, identify Non-Developmental Item (NDI) electronics upgrade candidates, and conduct proof-of-concept testing of NDI Forward Looking Infrared (FLIR).</p> <p>NOTE: Above actions will require internal realignment of funds to accomplish the efforts.</p> <p>FY 1996 PLAN:</p> <ul style="list-style-type: none"> <li>• (\$25K) Navy Boat Program. Conduct signature reduction studies and tests for the Naval Special Warfare Rigid Inflatable Boat (RIB).</li> <li>• (\$25K) Navy Boat Program. Conduct ballistic materials and riverine studies.</li> <li>• (\$1,493K) Patrol Coastal (PC). Award contract for an Engineering Development Model (EDM) of a non-developmental item missile system.</li> <li>• (\$4,254K) MK V SOC. Continue program. Finalize weapons integration efforts, conduct detailed analysis/component testing of NDI electronics upgrade and FLIR candidates. Conduct field operational testing and evaluation of upgraded weapons suite.</li> </ul> <p>FY 1997 PLAN:</p> <ul style="list-style-type: none"> <li>• (\$168K) Navy Boat Program. Initiate preliminary design of riverine craft.</li> <li>• (\$50K) Navy Boat Program. Conduct RIB transportability airdrop tests.</li> <li>• (\$50K) Navy Boat Program. Continue signature reduction studies and tests for RIB.</li> <li>• (\$1,791K) PC. Continue EDM contract and develop installation drawings for FY 1998 installation and testing.</li> </ul>			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S1684			
<ul style="list-style-type: none"><li>• (\$995K) MK V SOC. Continue program. Conduct field operational testing and evaluation of selected non-developmental item (NDI) electronics upgrades and forward looking infrared.</li></ul>				
ACQUISITION STRATEGY:				
<ul style="list-style-type: none"><li>• Patrol Coastal (PC). This is an NDI acquisition program. A fixed price competitive contract was awarded in 1990 for eight PCs and a contract option for an additional five was exercised in 1991. Armament systems are being added to the boat through integration, test, and evaluation of NDI systems.</li><li>• MK V Special Operations Craft. Program is in Phase II of the DoD acquisition process. Developmental testing and evaluations and early operational assessment have been completed. Milestone II was reached on June 21, 1994. Production contract was awarded in November 1994. The initial four craft are approved as low rate initial production. Remaining production systems will be procured via options to this contract subsequent to Milestone III. P3I efforts, oriented to non-developmental item improvements to baseline capabilities, commenced in 1QTR95. TECHEVAL/OPEVAL is scheduled for 4QTR95/1QTR96, followed by a Milestone III decision.</li></ul>				
<u>B. Program Change Summary</u>				
Previous President's Budget	FY94	FY95	FY96	FY97 Total Cost
	10.897	11.783	6.221	1.940 30.841
Appropriated Value	10.897	.083		
Adjustments to Appropriated Value / President's Budget	(2.961)	(.040)	(.424)	1.114
Current Budget Submit / President's Budget	7.936	.043	5.797	3.054 16.830
Change Summary Explanation:				
Funding: FY 1994 adjustments due to Stabilized Weapons Platform System sub-program restructure and Small Business Innovative Research payment. FY 1995 decrease is Congressional reduction of Defensewide RDT&E for travel, civilian pay and a directed Department of Energy reprogramming. Decrease in FY 1996 with corresponding increase in FY 1997 is to better align funding				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE		FEBRUARY 1995				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S1684									
with expected obligations/outlays. The MK V Special Operations Craft program was provided additional funding in FY 1996 and FY 1997 to pursue product improvement efforts. Inflation adjustments were applied.											
Schedule:		None.									
Technical:		None.									
C. <u>Other Program Funding Summary</u>											
RIBS		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	To Complete	Total Cost
PROC, Maritime Equip.		11.496	1.138	10.279	8.965	8.384	10.459	10.249	9.776	Cont.	Cont.
Riverine/Surface Support PROC, Maritime Equip.								4.379	17.912	Cont.	Cont.
Patrol Coastal PROC, Patrol Coastal		28.369	34.039							Cont.	Cont.
MK V SOC PROC, MK V		15.107	9.528	19.501	44.668	52.871	.498				142.173
PROC, Maritime Equip- ment Modifications				8.559	13.574	15.412	41.826	34.126	52.372	Cont.	Cont.
PROC, SOF Spares and Repair Parts				8.703	17.046	18.671					44.112

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D. <u>Schedule Profile</u> Navy Boat Program Complete DT of 10-meter RIB Complete RIB Airdrop Tests Patrol Coastal Complete DT of C3 System Complete MK 96 Gun Sys Assembly/Test SRB approval for MK 96 Install MS 0 for Surface-to-Surface Missile (SSM) Complete SSM COEA SSM Milestone I/II EDM Contract Award MK V Special Operations Craft DT&E Milestone II Production Contract Award Commence P3I efforts TECHEVAL/OPEVAL Milestone III										FY94		FY95		FY96		FY97																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project S1684		
A. <u>Project Cost Breakdown</u> (\$ in thousands)	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>
1. Navy Boat Program	112		50
2. Patrol Coastal			268
Primary Hardware Development	2,250		793
Ancillary Hardware Development	692		1,091
ILS	343		
Technical Data	1,025		
DT&E	655		200
Contractor Engineering Support	110		
Government Engineering Support	641		495
Travel	50		5
Miscellaneous (<15% of total)			
3. MK V Special Operations Craft			
Primary Hardware Development	420		
DT&E	968		250
OT&E			250
Contractor Engineering Support	20		500
Government Engineering Support	350		2,754
Program Management Support	100	43	300
Travel	10		50
Miscellaneous (<15% of total)	190		150
<b>TOTAL:</b>	<u>7,936</u>	<u>43</u>	<u>5,797</u>
			<u>3,054</u>

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE	FEBRUARY 1995
R-1 ITEM NOMENCLATURE										PE 1160404BB Special Operations Tactical Systems Development / Project \$1684	
APPROPRIATION / BUDGET ACTIVITY										RDT&E, DEFENSEWIDE / 7	
B. Budget Acquisition History and Planning Information										Actual or Budget Value (\$ in thousands)	
Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program
Product Development Organizations											
Peterson Builders	C/CPFF	Dec 93	4,955	4,955	4,555	400					4,955
Halter Marine	C/CPFF	Apr 94	9,500	9,500	9,481	19					9,500
Miscellaneous Government	MIPR	Oct 95-Sep96	4,429	4,429	2,982			1,447			4,429
Miscellaneous Contractor	C/OPTION	Nov 93	169	169	169						169
Miscellaneous Government	WR	Sep 93	220	220	220						220
Naval Special Warfare Center	WR	Aug 94	3,275	3,275		3,275					3,275
Miscellaneous Government	WR	Jan94-Mar95	1,445	1,445		1,445					1,445
TBD Contractor	C/OPTION	Jan96,97,98	2,669	2,669				1,350	1,069	250	2,669
Miscellaneous Government	MIPR	Jan 96	200	200				200			200
Miscellaneous Government	MIPR	Jan 97	200	200				490			200
Support and Management Organizations											
Miscellaneous Government	MIPR/WR	Oct93-Dec94	8,628	8,628	4,911	679	43	2,000	995		8,628
Miscellaneous Contractors	PO	Oct93-Dec94	1,863	1,863	1,551	312					1,863
Miscellaneous Contractor	C/FP	Mar 94	110	110		110					110
Miscellaneous Government	WR	Jan94-Oct94	393	393		393		300	300	500	393
Miscellaneous Government	WR	Jan-Sep 96,97,98	900	900							900
Test and Evaluation Organizations											
Miscellaneous Government	MIPR/PO	Oct93-Dec94	948	948		648		300			948
Miscellaneous Government	WR	Mar94-Mar95	655	655		655		200	200	1,500	665
Naval Special Warfare Center	WR	Jan96,97,98									1,900

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)						DATE				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Advanced Development / Project S1684								
<b>B. Budget Acquisition History and Planning Information</b> <b>Performing Organizations</b>						Actual or Budget Value (\$ in thousands)				
<b>Government Furnished Property</b>										
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program
Subtotal Product Development				17,407	5,139			2,997	1,559	Cont.
Subtotal Support and Management				6,462	1,494	43		2,300	1,295	Cont.
Subtotal Test and Evaluation					1,303			500	200	Cont.
Total Project				23,869	7,936	43		5,797	3,054	Cont.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE										FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3284											
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost		
3284, SOF Aircraft Defensive Systems		20.940	30.359	12.361	6.778	8.191	4.179	14.011	11.752	Cont.	Cont.		

A. Mission Description and Budget Item Justification

Project provides definition, development, prototyping and testing of aircraft defensive avionics systems. The project will identify hardware and software enhancements for each Special Operations Forces (SOF) aircraft that will reduce detection, vulnerability, and threat engagement from threat radars thereby increasing the overall survivability of SOF assets. This project will identify and develop enhancements to each platform to meet the projected threat. Recommendations for equipment modification or replacement will be developed by each System Program Manager based upon the results of ongoing engineering assessments and user operational requirements. This project is funding: dispenser upgrade and improvement programs, threat and missile warning receiver enhancements, radio frequency (RF) jammer improvements, and development of an infrared jamming system. Project also provides systems for SOF-unique portions of the Warner Robins-Air Logistics Center Electronic Warfare Avionics Integrated Systems Facility (EWAISF). The EWAISF directly supports software development and testing. The EWAISF effort is a type of Systems Integration Laboratory designed to support the incorporation of SOF aircraft defensive systems modifications into specific SOF platforms. Sub-projects include:

- A modification of the ALE-40 chaff and flare dispenser system to the ALE-47 configuration that will enhance the aircraft's self protection capability against infrared threats. This modification is applied to the AC-130U and MC-130H aircraft systems under the Lifeline modification.
- An improvement program that enhances and provides a direction finding capability to the APR-46 threat warning receiver.
- A joint international cooperative United Kingdom/United States project to develop a Directional Infrared Countermeasures (DIRCM) jammer for MC-130E/H and AC-130H/U aircraft capable of countering missile threats in the Band Four infrared frequency spectrum.
- A modification of the ALQ-172 Radio Frequency jammer that improves capability and frequency coverage for eight AC-130H gunships.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	FEBRUARY 1995
R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3284	
<p><b>FY 1994 ACCOMPLISHMENTS:</b></p> <ul style="list-style-type: none"> <li>• (\$11,560K) Continued with the Directional Infrared Countermeasures (DIRCM) development program. Completed documentation, solicited proposals. Started a competitive source selection (down-select), and prepared to award a joint UK/US DIRCM development contract.</li> <li>• (\$3,648K) Supported upgrade of the ALQ-172 Radio Frequency (RF) Countermeasures Jammer.</li> <li>• (\$3,340) Began development of AAR-44 Missile Launch Warning Receiver false alarm fixes.</li> <li>• (\$599K) Continued with the Electronic Warfare Avionics Integrated Facility development and upgrade efforts. Contracted for a MH-53J Pave Low integration processor workstation.</li> <li>• (\$293K) Continued APR-46 Phase I reliability and maintainability improvements development.</li> <li>• (\$1,500K) Supported installation of Lifeline upgrade modification to the AC-130U Gunship.</li> </ul>	
<p><b>FY 1995 PLAN:</b></p> <ul style="list-style-type: none"> <li>• (\$21,084) Continue with the DIRCM program. Complete source selection and award development contract. Complete manufacture of test article and begin qualification testing of prime mission equipment hardware.</li> <li>• (\$3,100K) Continue with development of the AAR-44 Missile Launch Warning System.</li> <li>• (\$2,465K) Continue to support upgrade of the ALQ-172 RF Countermeasures Jammer for eight AC-130H aircraft.</li> <li>• (\$1,949K) Begin phase two of APR-46 improvements effort. This effort will bring all the APR-46 threat warning systems onboard SOF C-130s into a single configuration with a direction finding capability.</li> </ul>	

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3284		
<ul style="list-style-type: none"><li>• (\$761K) Continue ALE-47 development and upgrade efforts.</li><li>• (\$1,000K) Continue to support the Electronic Warfare Avionics Integrated Systems Facility (EWAISF) laboratory efforts.</li></ul>			
FY 1996 PLAN:			
<ul style="list-style-type: none"><li>• (\$9,154K) Continue with cooperative UK/US Directional Infrared Countermeasures (DIRCM) development/production program. Complete qualification testing of prime mission equipment hardware.</li><li>• (\$1,264K) Continue to support upgrade of the ALQ-172 Radio Frequency Countermeasures Jammer for eight AC-130H aircraft.</li><li>• (\$1,943K) Continue to support EWAISF laboratory efforts.</li></ul>			
FY 1997 PLAN:			
<ul style="list-style-type: none"><li>• (\$3,858K) Continue to support a cooperative UK/US DIRCM development/production program for 59 SOF C-130 aircraft.</li><li>• (\$2,920K) Continue to support EWAISF laboratory efforts.</li></ul>			
ACQUISITION STRATEGY:			
<ul style="list-style-type: none"><li>• ALQ-172. Issue a competitive development contract based on offeror's technical approach and cost with follow-on production options.</li><li>• DIRCM. The Memorandum of Agreement between the UK/US established the cooperative international DIRCM program. The UK Ministry of Defence is the lead for the program. UK law applies to all acquisition. USSOCOM program manager is the US deputy to the UK Directional Infrared Countermeasures program manager.</li><li>• Electronic Warfare Avionics Integrated Systems Facility (EWAISF). Award sole source contracts to the manufacturer of the prime</li></ul>			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3284			
mission equipment required for hardware and hardware/software integration into the EWAISF.					
B. <u>Program Change Summary</u>		FY94	FY95	FY96	FY97
Previous President's Budget		20.943	31.035	11.437	6.811
Appropriated Value		20.943	31.035		
Adjustments to Appropriated Value / President's Budget		(.003)	(.676)	.924	(.033)
Current Budget Submit		20.940	30.359	12.361	6.778
Change Summary Explanation:					
Funding:		FY 1994 decrease is to fund a higher priority effort. FY 1995 decrease is for Congressional reduction in consulting services. FY 1996 change is required to complete the ALQ-172 RF Countermeasures Jammer and continue EWAISF efforts. Also, FY 1996 and FY 1997 request were adjusted for inflation.			
Schedule:		None.			
Technical:		None.			
C. <u>Other Program Funding Summary</u>					

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3284										
	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	To Complete	Total Cost		
PROC, C-130 Mods Adv Procurement		5.101								5.101		
PROC, C-130 Mods*	15.363	32.281	48.691	58.320	46.609	99.357	59.866	66.491	Cont.	Cont.		
*Includes C-130 Modifications sub-line item funds for ALE-47 Chaff and Flare Dispenser, DIRCM, APR-46 Top Mount Antenna, APR-46 Improvements, ALQ-172 Radio Frequency Countermeasures Jammer, and Lifeline modifications to the MC-130H, AC-130U, EC-130H and HC-130H.												
D. <u>Schedule Profile</u>												
			FY94			FY95		FY96		FY97		
	1	2	3	4	1	2	3	4	1	2	3	4
Directional Infrared Countermeasures (DIRCM)												
Complete PD contract		x										
Signed US/UK MOU			x									
Released Invitation to Tender Industry				x								
Award EMD Contract					x							
CDR												
Start Formal Testing						x						
Milestone III								x				
Complete AC-130H QOT&E									x			
Attain IOC on AC-130H										x		
Start MC-130H Installations											x	



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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project 3284		
A. <u>Project Cost Breakdown</u> (\$ in thousands)		FY94	FY95
1. AAR-44		3,340	3,100
2. ALE-40B/47			761
3. ALQ-172		3,648	2,465
4. DIRCM			1,264
Interface Control Document Development		680	
Preliminary / Functional Design		8,480	18,870
Tests			2,199
ECPs			2,698
Program Management Office			1,655
5. EWAISF		2,400	2,214
6. APR-46 DF		599	1,000
7. APR-46 IMP		293	1,949
8. AC-130U Lifeline		1,500	
TOTAL:		20,940	30,359
			12,361
			6,778

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7				R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project 3284									
B. Budget Acquisition History and Planning Information													
Performing Organizations													
Actual or Budget Value (\$ in thousands)													
Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Product Development Organizations TBD Contractor (DIRCM) Georgia Tech (EWAISF) TBD Contractor (EWAISF) Cincinnati Electronics (AAR-44) Various	C/FP	Jan 95	TBD	29,546		8,477	18,870	2,199			29,546		
	SS/CPFF	Sep 94	3,542	3,542		599	1,000	1,943			3,542		
	TBD	Jun 97	2,901	2,901					2,901		2,901		
	SS/CPFF	Sep 94	6,440	6,440		3,340	3,100				6,440		
	Various	Various			Cont.	2,476	2,710	1,655	1,377	Cont.	Cont.		
Support and Management Organizations Booz Allen Hamilton (DIRCM) SSAI (ALQ-172)	C/FP	Apr 93	TBD	11,544	1,228	2,400	2,214	2,602	1,500	2,000	11,544		
	SS/CPFF	Nov 94	2,914	2,914		1,200	1,200	514			2,914		
Test and Evaluation Organizations AFOTEC/Other (DIRCM) USAF Flight Test Facility (ALQ-172)	PO	Dec 95	TBD	4,698		2,448		2,698	1,000	1,000	4,698		
	PO	Feb 95	4,463	4,463			1,265	750			4,463		
Government Furnished Property													
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
ALQ-172 Group B provided by USAF													
Subtotal Product Development						15,292	25,680	5,797	4,278		51,047		
Subtotal Support and Management					1,228	3,200	3,414	3,116	1,500	2,000	14,458		
Subtotal Test and Evaluation						2,448	1,265	3,448	1,000	1,000	9,161		
Total Project					1,228	20,940	30,359	12,361	6,778	Cont.	Cont.		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		FEBRUARY 1995							
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3326									
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
3326, AC-130U		32.821	2.186	6.252	15.031	6.578	1.747	1.472	1.472	6.699	348.326
A. <u>Mission Description and Budget Item Justification</u>											
<p>The AC-130U aircraft will be more capable and survivable than the existing AC-130A/H aircraft. The aircraft subsystems will include precision navigation, target acquisition radar, fire control computers integrated on redundant MIL-STD-1553B data buses, electronic countermeasures, infrared countermeasures, aerial refueling, covert lighting, trainable weapons, All Light Level TV (ALLTV), infrared sensor, and secure communications systems. These subsystems will enable the gunship to strike targets with surgical accuracy, to loiter safely in the target area for extended time periods, and to perform these tasks in night or adverse weather conditions. Every effort has been made to adapt off-the-shelf equipment. To the maximum extent possible, the subsystems in the AC-130U will be common with systems on other Air Force Special Operations Command aircraft. AC-130U software will be fixed and/or enhanced using a Software Integration Laboratory (SIL). Decision to provide SIL through organic or contractor logistics support is scheduled for June 1995.</p>											
FY 1994 ACCOMPLISHMENTS:											
<ul style="list-style-type: none"><li>● (\$100K) Started Type I crew training.</li><li>● (\$18,400K) Completed flight test and evaluation program and certified the AC-130U for operational training use.</li><li>● (\$1,100K) Continued identifying mission critical engineering change orders resulting from flight tests.</li><li>● (\$278K) Continued technical order validation and verification.</li><li>● (\$5,600K) Continued Intermediate-level support equipment development and delivered one set of peculiar support equipment.</li></ul>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		FEBRUARY 1995
R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3326		
<ul style="list-style-type: none"> <li>• (\$1,200K) Developed Multi-function Intercom System.</li> <li>• (\$2,437K) Performed technical studies and analyses.</li> <li>• (\$1,400K) Began development of ammunition container.</li> <li>• (\$2,306K) Supported Program Management Office.</li> </ul>		
FY 1995 PLAN:		
<ul style="list-style-type: none"> <li>• (\$238K) Continue effort on technical order verification and validation.</li> <li>• (\$1,000K) Perform technical studies and analyses.</li> <li>• (\$948K) Support Program Management Office.</li> </ul>		
FY 1996 PLAN:		
<ul style="list-style-type: none"> <li>• (\$2,400K) Initiate development of Software Integration Laboratory software rehost.</li> <li>• (\$1,400K) Continue technical studies and analysis.</li> <li>• (\$2,200K) Analysis and identification of corrections to service reports.</li> <li>• (\$252K) Continue effort on technical order verification and validation.</li> </ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3326		
FY 1997 PLAN:			
•	(\$9,881K) Continue Software Integration Laboratory effort.		
•	(\$3,500K) Develop depot-level peculiar support equipment.		
•	(\$1,400K) Continue technical studies and analysis.		
•	(\$250K) Continue effort on technical order verification and validation.		
ACQUISITION STRATEGY: Modify C-130H airframe into a side-firing configuration on a sole-source fixed price incentive development contract. Conduct a combined QT&E/QOT&E and a dedicated QOT&E. The AC-130U will be logistically supported at the intermediate, organizational and depot level via interim contractor support until organic support is established. Required assets available is March 1995 with initial operational capability September 1995.			
B. <u>Program Change Summary</u>			
Previous President's Budget		FY94	FY95
Appropriated Value		32.821	5.200
Adjustments to Appropriated Value / President's Budget		32.821	2.700
Current Budget Submit / President's Budget		32.821	(.514)
Change Summary Explanation:			(12.653)
Funding:	FY 1995 decrease is for Congressional reduction of Defensewide RDT&E for travel, civilian pay and a directed Department of Energy reprogramming. FY 1995 was further decreased for Congressional reduction in consulting services. Decrease in		2.656
			15.031
			348.326

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE																							
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3326																							
<p>FY 1996 with corresponding increase in FY 1997 is to better align funding with expected obligations/outlays. Gunship Avionics Integration Trainer funding was moved to project S625, SOF Training Systems, beginning in FY 1996.</p> <p>Schedule: None.</p> <p>Technical: None.</p>																									
<p><u>C. Other Program Funding Summary</u></p> <table border="1"> <thead> <tr> <th></th> <th>FY94</th> <th>FY95</th> <th>FY96</th> <th>FY97</th> <th>FY98</th> <th>FY99</th> <th>FY00</th> <th>FY01</th> <th>To Complete</th> <th>Total Cost</th> </tr> </thead> <tbody> <tr> <td>PROC, AC-130U</td> <td>24.789</td> <td>70.603</td> <td>57.165</td> <td>40.362</td> <td>36.359</td> <td>19.712</td> <td>19.564</td> <td>8.916</td> <td>Cont.</td> <td>Cont.</td> </tr> </tbody> </table>					FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	To Complete	Total Cost	PROC, AC-130U	24.789	70.603	57.165	40.362	36.359	19.712	19.564	8.916	Cont.	Cont.
	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	To Complete	Total Cost															
PROC, AC-130U	24.789	70.603	57.165	40.362	36.359	19.712	19.564	8.916	Cont.	Cont.															
<p><u>D. Schedule Profile</u></p> <p>Finish Phase I of Test (Basic QT&amp;E)</p> <p>Finish QT&amp;E/QOT&amp;E; Start Dedicated QOT&amp;E</p> <p>RAA</p> <p>FOC: Mar 2001</p> <p>Begin Software Integration Lab S/W Rehost</p>																									

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project 3326		
A. <u>Project Cost Breakdown</u> (\$ in thousands)		<u>FY94</u>	<u>FY95</u> <u>FY96</u> <u>FY97</u>
1. Prime Contractor Effort		14,527	
2. Government Test Support		7,673	
3. Other Gov't Test (TOVAV)		278	252 250
4. SIL S/W Rehost			2,400 9,881
5. Peculiar Support Equipment		5,600	3,500
6. Technical Studies / Analyses		2,437	1,400 1,400
7. Travel		989	
8. Development of Service Reports			2,200
9. Miscellaneous (known requirements i.e. Safety Board, Program Office Support, etc),		1,317	
<b>TOTAL:</b>		<u>32,821</u>	<u>2,186</u> <u>6,252</u> <u>15,031</u>

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE									
RDT&E, DEFENSEWIDE / 7				PE 1160404BB Special Operations Tactical Systems Development / Project 3326									
B. Budget Acquisition History and Planning Information													
Performing Organizations													
Actual or Budget Value (\$ in thousands)													
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Product Development Organizations Rockwell NAA Rockwell Ft Test Rockwell ECPs Loral (IBM) General Electric TBD (ECOs) LASC Rockwell (T-1 Training) Miscellaneous	C/FPF	Jul 87	423,000	445,100	193,989	600					194,589		
	SS/FPF			16,941	11,034	5,907					16,941		
	SS/CPFF	Various		37,555	1,545	12,613		4,600	13,381	5,416	37,555		
	SS/FPF			4,777	4,777						4,777		
	SS/FFP			1,436	1,436						1,436		
	TBD	Various		135	135						135		
	SS/FFP	Oct 94		955	5	950					955		
	SS/FFP			616	616						616		
	Various	Various		3,798	3,798						3,798		
	Support and Management Organizations Air Force, AFMC ASC/LU	Various			32,188	14,279	4,800	1,948	1,400	1,400	5,600	29,427	
Test and Evaluation Organizations AFITC ITT Other Gov't Test (TOVV) RADC Testing WRDC Testing	PO			33,968	26,295	7,673					33,968		
	SS/FFP			835	835						835		
	PO	Oct/ea. FY		1,709	438	278	238	252	250	253	1,709		
	PO			748	748						748		
	PO			224	224						224		

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PE 1160404BB Special Operations Tactical Systems Development / Project 3326					
RDT&E, DEFENSEWIDE / 7													
Government Furnished Property													
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Product Development Property Lockheed Airframe Allison Engines Various Avionics Various Other	SS/FFP SS/FFP MIPR MIPR				13,398 2,196 2,868 413						13,398 2,196 2,868 413		
Support and Management Property None													
Test and Evaluation Property Flight Test Support Equipment Other Gov't Test (TOVV) Milstrip					1,672 66						1,672 66		
Subtotal Product Development					236,210	20,070		4,600	13,381	5,416	279,677		
Subtotal Support and Management					14,279	4,800	1,948	1,400	1,400	5,600	29,427		
Subtotal Test and Evaluation					30,278	7,951	238	252	250	253	39,222		
Total Project					280,767	32,821	2,186	6,252	15,031	11,269	348,326		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		FEBRUARY 1995									
APPROPRIATION / BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE / PROJECT NO.											
RDT&E, DEFENSEWIDE / 7		PE 1160404BB Special Operations Tactical Systems Development / Project 3642											
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost		
3642, Aircrew Training System		24.697	38.441	18.410	4.478	.249	.249	0	0	0	208.815		
A. <u>Mission Description and Budget Item Justification</u>													
<p>This project is developing an integrated, state-of-the-art Special Operations Forces (SOF) aircraft, ground-based Aircrew Training System (ATS) to support initial aircraft, mission, and special qualification, continuation training, upgrade training, and combat mission rehearsal requirements for MC-130E and MC-130H aircrews. The ATS requirement was driven by the lack of formal schools for the Combat Talon crew members and the absence of multi-aircraft, integrated, real-time combat mission rehearsal capability for MC-130E/H aircrews. Existing training rehearsal restrictions caused by airspace/weather, critical mission safety, and security consideration require a capability to rehearse extremely sensitive missions of the highest national priority in other than actual aircraft. Increasing operational tasking, joint maneuver training, and the extensive crew member training workload for initial, continuation, mission, special mission and upgrade training have all contributed to the need for this comprehensive training capability. Decreasing crew member experience levels in all crew positions exacerbates the need for this capability. SOF ATS provides training and fixed site aircrew integrated mission rehearsal capability in a contractor operated and maintained system composed of weapon system trainers, mission rehearsal devices, part task trainers, maintenance trainers, and computer based training equipment, logistics support packages, courseware, and contractor provided instruction for all crew members of each aircraft. The system will provide a mix of academics, simulator training, and aircraft flight training to produce combat qualified crew members that are guaranteed by the contractor. This system will also provide combat mission rehearsal capability allowing MC-130E/H aircrews to rehearse highly classified, real-world missions of the highest national priority within 48 hours of tasking by National Command Authority.</p>													
FY 1994 ACCOMPLISHMENTS:													
<ul style="list-style-type: none"><li>• (\$19,500K) Continued Combat Talon II simulator development.</li><li>• (\$1,000K) Continued data base generation system.</li><li>• (\$2,000K) Continued Combat Talon I/II courseware.</li></ul>													

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		FEBRUARY 1995
R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3642		
<ul style="list-style-type: none"> <li>• (\$2,197K) Supported Program Management Office.</li> </ul>		
FY 1995 PLAN:		
<ul style="list-style-type: none"> <li>• (\$290K) Combat Talon II full course small group tryouts.</li> <li>• (\$5,500K) Continue Combat Talon I Weapon System Trainer (WST) and Mission Rehearsal Device (MRD) development.</li> <li>• (\$30,000K) Continue Combat Talon II WST and MRD development.</li> <li>• (\$2,351K) Support Program Management Office.</li> <li>• (\$300K) Deliver Database Generation System.</li> </ul>		
FY 1996 PLAN:		
<ul style="list-style-type: none"> <li>• (\$12,000K) Continue Combat Talon II WST and MRD development.</li> <li>• (\$5,000K) Continue Talon I WST and MRD development.</li> <li>• (\$1,410K) Support Program Management Office.</li> </ul>		
FY 1997 PLAN:		
<ul style="list-style-type: none"> <li>• (\$500K) Complete Combat Talon I WST and MRD development.</li> <li>• (\$500K) Continue Combat Talon I curriculum development.</li> </ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3642			
<ul style="list-style-type: none"><li>• (\$1,000K) Complete Combat Talon II Aircrew Training System development.</li><li>• (\$150K) Continue Combat Talon II curriculum development.</li><li>• (\$328K) Support Program Management Office.</li><li>• (\$2,000K) Combat Talon II Training System Support Center delivery.</li></ul>					
ACQUISITION STRATEGY:					
Award a competitive contract to develop an integrated ground-based Aircrew Training System (ATS) composed of weapon system trainers, mission rehearsal devices, part task trainers, and computer-based training. ATS will be contractor operated and maintained.					
B. <u>Program Change Summary</u>		FY94	FY95	FY96	FY97
Previous President's Budget		24.697	38.615	17.512	4.474
Appropriated Value		24.697	38.615		
Adjustments to Appropriated Value /President's Budget			(.174)	.898	.004
Current Budget Submit / President's Budget		24.697	38.441	18.410	4.478
Change Summary Explanation:					
Funding:	FY 1995 decrease is for Congressional reduction in consulting services. FY 1996 and FY 1997 adjustments are required to complete the Combat Talon I Mission Rehearsal Device development. FY 1996 and FY 1997 request was adjusted for inflation.				
Schedule:	None.				
Technical:	None.				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	
R-1 ITEM NOMENCLATURE / PROJECT NO.										FEBRUARY 1995	
RDT&E, DEFENSEWIDE / 7										PE 1160404BB Special Operations Tactical Systems Development / Project 3642	
C. <u>Other Program Funding Summary</u>											
	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	To Complete	Total Cost	
PROC, Aircraft Support	1.086	3.877	2.045							63.794	
D. <u>Schedule Profile</u>											
Deliver Database Generation System			FY94		FY95		FY96		FY97		
Deliver Talon II Weapon System Trainer (WST)			1	2	3	4	1	2	3	4	
Deliver Talon I WST						x					
Deliver Talon II Msn Rehearsal Device (MRD)										x	
Mission Rehearsal Info Sub-System Delivery										x	
Summary Software CDR											
Complete Talon I/II Courseware											
Interim Training Sys Support Ctr Delivery											
Talon I WST FCA/PCA										x	
Talon I MRD Delivery											x

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project 3642		
	FY94	FY95	FY96
A. <u>Project Cost Breakdown</u> (\$ in thousands)			
Combat Talon I			
Curriculum	2,310		500
Weapon System Trainer (WST)	1,211	5,000	400
Mission Rehearsal Device (MRD)	429	500	100
Combat Talon II			
Curriculum	1,042	290	150
WST	14,370	18,000	150
MRD		11,000	850
Training Systems Support Center	501	1,000	2,000
Database Generation System	3,375	300	
Other			
Other Training Systems			
Mission Support	1,459	2,351	1,410
			328
TOTAL:	24,697	38,441	18,410
			4,478

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7				R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project 3642									
B. <u>Budget Acquisition History and Planning Information</u> Performing Organizations													
Actual or Budget Value (\$ in thousands)													
Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Product Development Organizations Loral	C/CPAF,IF	Jun 89		199,493	118,810	23,238	36,090	17,000	4,150	.205	199,493		
Support and Management Organizations Air Force AFMC ASC				9,322	3,481	1,459	2,351	1,410	.328	.293	9,322		
Test and Evaluation Organizations													
Government Furnished Property													
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Product Development Talon I GFE (no cost to project) Talon II GFE (no cost to project) Misc GFE (no cost to project)			1988-93 1988-93 1988-93										
Subtotal Product Development					118,810	23,238	36,090	17,000	4,150	.205	199,493		
Subtotal Support and Management					3,481	1,459	2,351	1,410	.328	.293	9,322		
Subtotal Test and Evaluation													
Total Project					122,291	24,697	38,441	18,410	4,478	.498	208,815		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE		FEBRUARY 1995				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S350									
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
S350, Special Operations Forces Planning and Rehearsal System (SOFPARS)		5.366	2.087	9.653	6.678	5.374	2.786	2.786	2.786	Cont.	Cont.
<p><u>A. Mission Description and Budget Item Justification</u></p> <p>SOFPARS is a joint acquisition program for the United States Special Operations Command (USSOCOM). This program is developing an automated mission planning capability to support Special Operations Forces (SOF). SOFPARS will be the SOF version of the Air Force Mission Support System (AFMSS). SOFPARS will be provided to Air Force Special Operations Command (AFSOC) units and the aviation component of the United States Army Special Operations Command (USASOC) - the 160th Special Operations Aviation Regiment (SOAR). SOFPARS will automate mission planning thus allowing SOF commanders and crews to plan and respond quickly to missions of national importance as well as day-to-day taskings. To accomplish this task, SOFPARS will provide a multi-command level planning capability at major SOF headquarters, theater headquarters, SOF Forward Operating Bases and Forward Operating Locations. SOFPARS will also provide portable subsystems and mission execution support products for use by crews deployed to operational locations. Present aviation mission planning capabilities cannot adequately support the stated mission need. Existing systems are insufficient for planning SOF operations. Specifically, existing systems lack sufficient processing speed and flexibility, storage capacity, growth potential, graphics (both on-screen and hard copy output), image processing and storage, and the ability to process combat planning folder data in a timely manner. They also lack near-real-time access to national/tactical level data bases and the capability to update data in a timely fashion, along with the means to effectively process the data during mission planning. The mobility, complexity, quantity, and lethality of enemy threats dictate automated data input and systems that can be interfaced via electronic communication systems throughout the SOF community. The SOFPARS effort meets the joint requirement to ensure interoperability and standardization of the mission planning process between SOF and the Services. Develops Aircraft/Weapons/Electronics modules for MH-60G/K/L, MH-47E/D, MH-53J, MC-130E/H, AC-130H/U, A/H-6, HC-130P/N, and CV-22.</p> <p>FY 1994 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"><li>• (\$1,341K) Continued development of the Air Force Mission Support System core mission planning for Blocks C1.0, C2.0, and C3.0 software and released Block C1.0 software for operational testing.</li></ul>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		FEBRUARY 1995
R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S350		
<ul style="list-style-type: none"> <li>• (\$4,025K) Began integration of MH-60K/L and MH-47D/E SOF Aircraft/Weapons/Electronics (A/W/E) modules and SOF common mission planning modules.</li> </ul>		
FY 1995 PLAN:		
<ul style="list-style-type: none"> <li>• (\$201K) Develop one-man portable mission planning hardware.</li> <li>• (\$886K) Continue development of Block C3.0 software.</li> <li>• (\$1,000K) Continue A/W/E and Data Transfer Device development for aircraft integration.</li> </ul>		
FY 1996 PLAN:		
<ul style="list-style-type: none"> <li>• (\$3,712K) Continue A/W/E software module development for all SOF aircraft.</li> <li>• (\$3,553K) Complete block C3.0 software development and start development of C4.0 software development.</li> <li>• (\$2,388K) Continue SOF common module development to include integrating targeting and intelligence interfaces to SOF mission planning (Special Operations Command Research, Analysis, and Threat Evaluation System, Sentinel Byte, Constant Source, Mission Rehearsal Imagery Support System).</li> </ul>		
FY 1997 PLAN:		
<ul style="list-style-type: none"> <li>• (\$2,600K) Continue C4.0 software development.</li> <li>• (\$1,091K) Continue SOF common module development to include integrating targeting and intelligence interfaces.</li> <li>• (\$2,987K) Continue A/W/E software module development for all SOF aircraft.</li> </ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S350				
<b>ACQUISITION STRATEGY:</b>  Develop mission planning software to support SOF operations leveraging ongoing efforts with common Air Force Mission Support System requirements on a competitively awarded cost plus contract. Maximize use of existing hardware technology procured via firm fixed price contract to take advantage of software portability and open system architecture. Focuses on Aircraft / Weapons / Electronics interface required to initialize and upload aircraft avionics through the use of electronic data transfer devices. Uses software support facility to maintain and update software.						
<b>B. <u>Program Change Summary</u></b>						
Previous President's Budget		FY94	FY95	FY96	FY97	Total Cost
Appropriated Value		5.813	2.201	6.488	3.691	Cont.
Adjustments to Appropriated Value / President's Budget		5.813	2.201			
Current Budget Submit		(.447)	(.114)	3.165	2.987	
Change Summary Explanation:		5.366	2.087	9.653	6.678	Cont.
<b>Funding:</b> FY 1994 decrease was transferred to the Small Business Innovative Research program. FY 1995 decrease was for Congressional reduction in consulting services. FY 1996 and FY 1997 funds were added to resource the high priority effort to develop Aircraft / Weapons / Electronics software interface and data. FY 1996 and FY 1997 requests were adjusted for inflation.						
<b>Schedule:</b>		None.				
<b>Technical:</b>		None.				

## UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		FEBRUARY 1995								
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7										R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S350										
<u>C. Other Program Funding Summary</u>																				
	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	To Complete	Total Cost										
PROC, SOFPARS	10.791	2.937	.595	.100	.597	1.194	4.777	5.175	Cont.	Cont.										
<u>D. Schedule Profile</u>																				
Block C2.0 System Design Review (SDR)																				
A/W/E SOF Module Functional Spec Review																				
Block C3.0 Functional Design Review (FDR)																				
SOF A/W/E Initial Design Review																				
Block C3.0 SDR																				
Block C2.0 FCA/PCA																				
SOF A/W/E CDR																				
Complete C2.0 Development																				
Block C4.0 FDR																				
Complete C3.0 Development																				
Block C4.0 SDR																				

## UNCLASSIFIED

RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project S350		
A. <u>Project Cost Breakdown</u> (\$ in thousands)	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>
1. Air Force Mission Support System Mission Planning Core	1,341	1,087	3,553
2. Aircraft, Weapons, Electronics Interfaces and SOF Common Module	4,025	1,000	6,100
			<u>FY97</u>
			2,600
			4,078
TOTAL:	<u>5,366</u>	<u>2,087</u>	<u>9,653</u>
			<u>6,678</u>

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE	FEBRUARY 1995
R-1 ITEM NOMENCLATURE										PE 1160404BB Special Operations Tactical Systems Development / Project S350	
APPROPRIATION / BUDGET ACTIVITY											
RDT&E, DEFENSEWIDE / 7											
B. Budget Acquisition History and Planning Information											
Performing Organizations											
Actual or Budget Value (\$ in thousands)											
Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program
Product Development Organizations Lockheed Sanders, Nashua, NH	CPEFF	Apr 91		Cont.	15,180	4,580	1,715	7,770	5,375	Cont.	Cont.
Support and Management Organizations Various	Various	Various		Cont.	4,757	786	372	1,883	1,303	Cont.	Cont.
Test and Evaluation Organizations											
Government Furnished Property											
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program
Subtotal Product Development					15,180	4,580	1,715	7,770	5,375	Cont.	Cont.
Subtotal Support and Management					4,757	786	372	1,883	1,303	Cont.	Cont.
Subtotal Test and Evaluation											
Total Project					19,937	5,366	2,087	9,653	6,678	Cont.	Cont.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE										FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S375											
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost		
S375, Weapons and Support Systems Advanced Development		2.226	0	.199	2.298	2.463	1.843	3.640	2.702	Cont.	Cont.		

Name Change: Project formerly called "Special Operations Weapons Systems Advanced Development".

#### A. Mission Description and Budget Item Justification

Special Operations Forces (SOF) often deploy as small, independent, quick reaction, foot-mobile teams independent of primary logistics support. Existing weapons and fire control are frequently too heavy to use under these conditions. This project provides for developing and testing of specialized, lightweight individual weapons, fire control and tactical surveillance equipment to meet the unique requirements of SOF. This is a continuing program. Sub-projects include:

- Body Armor. Lightweight ballistic/force protection systems.
- Improved Night Observation Device (INOD). Integrated day/night image intensification scopes for both fire control and observation for the M4 Carbine.
- M4 Carbine SOF Modifications Kit. SOF variant of standard Army M4 Carbine. Allows mounting of optional accessories (up to 30 different functions/capabilities) such as laser pointer, active aiming module, and night vision/thermal imaging devices and provides fully automatic capabilities.
- SOF Offensive Handgun. An offensive weapon suitable for harsh environments. Replaces personal defensive weapon.

#### FY 1994 ACCOMPLISHMENTS:

- (\$529K) M4 Carbine SOF Modification/Accessories Kit: Integrated and modified the M4 Carbine Picatinny rail to allow for mounting of up to 30 different functions/capabilities including laser pointers, active aiming modules, and night vision/thermal imaging devices.



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S375		
<ul style="list-style-type: none"> <li>• (\$1,697K) SOF Offensive Handgun: Entered engineering and manufacturing development, contractor delivered 30 refined prototype systems and technical data package, and performed technical evaluation and operational evaluation.</li> </ul>			
FY 1995 PLAN: None.			
FY 1996 PLAN:			
<ul style="list-style-type: none"> <li>• (\$199K) Initiate Body Armor program by conducting studies of technology to identify materials and fabrics which provide measurable improvement over existing body armor systems.</li> </ul>			
FY 1997 PLAN:			
<ul style="list-style-type: none"> <li>• (\$2,048K) Conduct Improved Night Observation Device Milestone 0/I review. Begin Phase 0 development by evaluating and adapting improved optical technologies; Conduct Milestone I and II reviews as part of the M4 Carbine follow on effort.</li> <li>• (\$250K) Conduct Body Armor Milestone I review, initiate prototype development.</li> </ul>			
ACQUISITION STRATEGY:			
<ul style="list-style-type: none"> <li>• M4 Carbine Modification/Accessories Kits. The acquisition strategy is to acquire the accessory kits as a Non-Developmental Item/Commercial Off-the-Shelf (NDI/COTS) acquisition. In FY 1994 a market survey was conducted to identify components meeting accessory kit requirements. Test samples of components were procured and were integrated into prototype accessory kits. These kits were subjected to developmental testing including a Joint Service Operational Suitability Test in the third quarter of FY 1994. Components tested met the technical requirements of the Operational Requirements Document and performance specifications have been developed. The program is proceeding to production with the most critical components being procured in FY 1995 and follow-on components in subsequent fiscal years using firm-fixed price contracts. These contracts will be of the Indefinite Delivery/Indefinite Quantity type.</li> </ul>			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		FEBRUARY 1995							
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S375									
<b>B. <u>Program Change Summary</u></b>											
Previous President's Budget				FY94	FY95	FY96	FY97	Total Cost			
Appropriated Value				2.226				Cont.			
Adjustments to Appropriated Value / President's Budget				2.226		.199	2.298				
Current Budget Submit / President's Budget				2.226		.199	2.298	Cont.			
Change Summary Explanation:											
Funding:		FY 1996 increase is to start the Body Armor program. FY 1997 increase starts the program to acquire an Improved Day/Night Observation Device for the M4 Accessory Kit and continues the Body Armor program.									
Schedule:		None.									
Technical:		None.									
<b>C. <u>Other Program Funding Summary</u></b>											
		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	To Complete	Total Cost
PROC, SOF Small Arms & Spt. Equip.		3.188	8.470	9.972	10.676	8.397	12.330	4.450	7.464	Cont.	Cont.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		FEBRUARY 1995											
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7										R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S375													
										FY94		FY95		FY96		FY97							
D. <u>Schedule Profile</u>										1	2	3	4	1	2	3	4	1	2	3	4		
SOF Offensive Handgun																							
CDR													x										
DT&E														x									
MS III																	x						
Body Armor																							
Initiate Studies																		x					
MS I																			x				
M4 Carbine Accessories Kit																							
Follow-on MS 0/I																	x						
MS III on Scope, Suppressor, Rail																			x				
Improved Night Obs Device (INOD) MS 0/I																				x			
INOD Contract Award																					x		

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project S375		
A. <u>Project Cost Breakdown (\$ in thousands)</u>	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>
1. SOF Offensive Handgun	1,697		
2. M-4 Carbine Mod Kits			
Kit Component T&E	529		
INOD Development			2,048
3. Body Armor			199
			250
TOTAL:	<u>2,226</u>	<u>0</u>	<u>199</u>
			<u>2,298</u>

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7					R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project S375								
B. Budget Acquisition History and Planning Information Performing Organizations													
Actual or Budget Value (\$ in thousands)													
Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Product Development Organizations Naval Special Warfare Ctr - Crane	ALLOT	Sep 96,97	NA	NA	2.877	2.226		.199	2.298	Cont.	Cont.		
Support and Management Organizations													
Test and Evaluation Organizations													
Government Furnished Property													
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Subtotal Product Development					2.877	2.226		.199	2.298	Cont.	Cont.		
Subtotal Support and Management													
Subtotal Test and Evaluation													
Total Project					2.877	2.226		.199	2.298	Cont.	Cont.		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE										FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S625											
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost		
S625, SOF Training Systems		0	0	2.488	7.861	7.961	5.473	9.852	1.990	Cont.	Cont.		

A. Mission Description and Budget Item Justification

This project funds the AC-130U Gunship Aircrew / Maintenance Training System (GA/MTS), the MH-47E/MH-60K Evans & Sutherland Image Generator (ESIG) 4000 effort, and a deployable mission rehearsal capability for all SOF aircraft. It supports SOF rotary wing aircraft and develops training capabilities for SOF fixed wing aircraft. The GA/MTS develops an integrated, ground-based combination training and mission rehearsal system to support initial, mission, special qualification, continuation, upgrade and maintenance training for the AC-130U Gunship aircrews. The need for GA/MTS is driven by the lack of any current training or mission rehearsal capability for the aircrew and maintenance personnel. The GA/MTS will consist of two primary components. The first component will feature full fidelity, with motion simulation for the pilots and flight engineers. The second component, a Battle Management Center, will support training for the Fire Control Officer, Infrared Sensor Operator, Television Sensor Operator, Navigator and Electronic Warfare Officer positions. Additionally, the Instructor Operator Station will provide role-playing capabilities for the gunner and loadmaster. GA/MTS will be networked with other AFSOC mission rehearsal devices. ESIG 4000 integration effort will enhance the MH-47E/MH-60K combat mission simulators and fulfill the requirement for training and mission rehearsal capability. Development of a field deployable mission rehearsal capability for all SOF aircraft will begin in FY 1998.

FY 1994 ACCOMPLISHMENTS: NA.

FY 1995 PLAN: NA.

FY 1996 PLAN:

- (\$2,000K) Begin development of AC-130U GA/MTS.
- (\$488K) Program Management Office support.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
R-1 ITEM NOMENCLATURE / PROJECT NO.		FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY	PE 1160404BB Special Operations Tactical Systems Development / Project S625	
RDT&E, DEFENSEWIDE / 7		
FY 1997 PLAN:		
• (\$2,000K) Integrate Image Generator into MH-47E/MH-60K combat mission simulators.		
• (\$4,500K) Continue development of AC-130U Gunship Aircrew / Maintenance Training System (GA/MTS).		
• (\$1,361K) Program Management Office support.		
ACQUISITION STRATEGY:		
• GA/MTS. Program is currently in Phase 0. Trade-off studies and analyses, which are being conducted under another project, will be used to determine best technical approach. These analyses, in conjunction with cost and training effectiveness analyses, will be used to refine the acquisition strategy. Current strategy is to achieve Milestone I in June 1995, award a trainer development contract in early FY 1996 and award an Image Generation Integration contract in early FY 1997.		
B. <u>Program Change Summary</u>		
Previous President's Budget	FY94	FY95
Appropriated Value	FY96	FY97
Adjustments to Appropriated Value / President's Budget		Total Cost
Current Budget Submit / President's Budget	2.488	7.861
Change Summary Explanation:	2.488	7.861
Funding:	Project is a new start.	
Schedule:	NA.	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		FEBRUARY 1995							
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7										R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S625									
Technical: NA.																			
C. <u>Other Program Funding Summary</u>																			
PROC, SOF Training Systems																			
</																			



RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project S625		
A. <u>Project Cost Breakdown (\$ in thousands)</u>		<u>FY94</u>	<u>FY95</u>
			<u>FY96</u>
			<u>FY97</u>
1. AC-130U Aircrew Maintenance Training System		2,000	4,500
2. ESIG 4000 Integration			2,000
3. Mission Support		488	1,361
TOTAL:		0	7,861

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7				R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project S625									
B. Budget Acquisition History and Planning Information													
Performing Organizations													
Actual or Budget Value (\$ in thousands)													
Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Product Development Organizations Air Force (GAMTS)	SS/FFP	Dec 95											
Air Force (ESIG 4000 Integration)	SS/FFP	Dec 96						2,000	4,500 2,000	Cont. 0	Cont. 2,000		
Support and Management Organizations Air Force								488	1,361	1,900	3,749		
Test and Evaluation Organizations													
Government Furnished Property													
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Subtotal Product Development								2,000	6,500	Cont.	Cont.		
Subtotal Support and Management								488	1,361	1,900	3,749		
Subtotal Test and Evaluation													
Total Project								2,488	7,861	Cont.	Cont.		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE										FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S700											
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost		
S700, Communications Advanced Development		10.332	3.382	1.727	2.333	2.246	2.837	3.022	2.785	Cont.	Cont.		

A. Mission Description and Budget Item Justification

This project provides for development and testing of selected items of specialized equipment to meet the unique requirements of Special Operations Forces (SOF). Specialized equipment will permit small, highly trained forces to conduct required operations across the entire spectrum of conflict. These operations are generally conducted in harsh environments, for unspecified periods, and in locations requiring small unit autonomy. Special Operations Forces must infiltrate by land, sea, and air to conduct unconventional warfare, direct actions, or deep reconnaissance operations in denied areas against insurgent units, terrorists, or highly sophisticated threat forces. The requirement to operate in denied areas controlled by a sophisticated threat mandates that SOF systems remain technologically superior to threat forces to ensure mission success.

USSOCOM has developed an overall strategy to ensure that Command, Control, Communications, Computers, and Intelligence (C4I) systems continue to provide SOF with the required capabilities into the 21st century. USSOCOM's C4I systems comprise an integrated network of systems providing positive command and control and timely exchange of intelligence and threat warning to all organizational echelons. The C4I systems that support this new architecture will employ the latest standards and technology by transitioning from separate systems to full integration with the infosphere. The infosphere will allow SOF elements to operate with any force combination in multiple environments. The C4I programs funded in this project are grouped by the level of organizational element they support: Operational Element (Team), Above Operational Element (Deployed), and Above Operational Element (Garrison). Sub-projects include:

OPERATIONAL ELEMENT (TEAM)

- Improved Lightweight Satellite Antenna (ILSA). ILSA is a lightweight SOF ultra-high frequency satellite antenna which is ruggedized, high gain, low profile, state-of-the-art, and is transportable in a battle dress uniform cargo pocket.
- Naval Special Warfare Tactical Radio System. System consists of a waterproof communications pack capable of housing up to five radios and associated cryptographic equipment and intercom system connected to a helmet with ballistics protection.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
R-1 ITEM NOMENCLATURE / PROJECT NO.		FEBRUARY 1995
PE 1160404BB Special Operations Tactical Systems Development / Project S700		
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		
<ul style="list-style-type: none"><li>Special Mission Radio System (SMRS). SMRS is a radio system that provides SOF a near term solution for a lightweight, Low Probability of Intercept/Low Probability of Detection (LPI/LPD) manpack high frequency radio. Deployed in hostile and clandestine environments, the system consists of the AN/PRC-137 manpack radio and the AN/TRQ-43 base station radio, and provides hardware improvements and software documentation.</li></ul>		
ABOVE OPERATIONAL ELEMENT (DEPLOYED)		
<ul style="list-style-type: none"><li>SMRS is also planned for use at this level.</li><li>Special Forces Base Station (SFBS). SFBS is a small, transportable, low profile, high-burst rate, base station with the capability of being deployed in one C-130 or C-141 aircraft. The system provides secure, reliable command and control communications to, and terminates traffic from, special forces teams.</li><li>SOF Tactical Assured Connectivity Systems (SOFTACS) (formerly called Tactical C4I Mod). SOFTACS is an integrated suite of communications systems designed to support the high-capacity, digital, secure, interoperable, transmission and switching requirements of USSOCOM C4I architecture.</li></ul>		
ABOVE OPERATIONAL ELEMENT (GARRISON)		
<ul style="list-style-type: none"><li>SMRS is also planned for use at this level.</li></ul>		
FY 1994 ACCOMPLISHMENTS:		
<ul style="list-style-type: none"><li>(\$4,797K) Army Special Operations Command Network. Matured and finalized design, defined non-developmental item hardware procurement. Tested and evaluated system and began preparation of documentation for Milestone III decision.</li><li>(\$975K) Special Forces Base Station (SFBS). Initiated preparations for a milestone decision to authorize the development of a prototype system for demonstration and validation testing (Phase II).</li></ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S700		
	<ul style="list-style-type: none"><li>• (\$341K) Naval Special Warfare Tactical Radio System. Completed prototype engineering development, conducted technical testing, obtained Milestone II approval for low-rate initial production.</li><li>• (\$732K) Improved Lightweight Satellite Antenna. Conducted market survey and analysis of candidate systems.</li><li>• (\$2,341K) SOF Tactical Assured Connectivity Systems (SOFTACS). Conducted market survey and initiated development of programmatic documentation required for milestone decision leading to procurement of NDI off-the-shelf subsystems that provide partial mission capability. Initiated program management efforts to develop a prototype system to provide significantly increased information transfer capability to deployed special operations commanders and joint operations task forces.</li><li>• (\$146K) Mobile Communications. Conducted market survey for integrated AFSOC Mobile Communications Package. Developed acquisition strategy; developed life cycle cost estimates; and determined critical system characteristics for Milestone 0/II decision; design prototype for procurement in FY 1995.</li><li>• (\$1,000K) Special Mission Radio System (SMRS). Initiated development of necessary enhancements to prove-out / implement a worldwide interlocking base station capability.</li></ul>		
FY 1995 PLAN:			
	<ul style="list-style-type: none"><li>• (\$3,382K) Special Forces Base Station (SFBS). Develop prototype (Phase II -- engineering and manufacturing development); finalize selected design; and conduct operational evaluation of system. Prepare and conduct Milestone III review.</li></ul>		
FY 1996 PLAN:			
	<ul style="list-style-type: none"><li>• (\$1,194K) SMRS. Develop high frequency communication mode enhancements and Digital Message Entry Device ruggedization.</li><li>• (\$199K) SOFTACS. Perform integration, operational test and evaluation of the SOFTACS message switch subsystem, and tri-band super high frequency (SHF) SATCOM terminals into the communications architecture.</li></ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		FEBRUARY 1995
R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S700		
<ul style="list-style-type: none"> <li>• (\$334K) Task Group C3 Van Upgrade. Conduct engineering, integration, and development of Non-Developmental Item (NDI)/ Commercial Off-the-Shelf (COTS) / Government Off-the-Shelf (GOTS) equipment in task group vans and other mobile/transportable communications packages.</li> </ul> <p>FY 1997 PLAN:</p> <ul style="list-style-type: none"> <li>• (\$1,194K) Special Mission Radio System (SMRS). Develop a conventional tactical satellite capability (i.e., satellite waveform enhancement and satellite communications networking capability).</li> <li>• (\$792K) SOF Tactical Assured Connectivity Systems (SOFTACS). Conduct operational test and evaluation of SOFTACS tri-band SHF SATCOM and tactical local area network (LAN) subsystem.</li> <li>• (\$347K) Task Group C3 Van Upgrade. Reduce aircraft and sealift space requirements. Conduct engineering, integration, testing, and development of NDI/COTS/GOTS equipment in Task Group C3 vans and other mobile/transportable communications packages.</li> </ul> <p>ACQUISITION STRATEGY:</p> <ul style="list-style-type: none"> <li>• SMRS. Performance capability of the basic AN/PRC-137 (manpack) and AN/TRQ-43 (base station) radios will be improved through pre-planned product improvements. Following a Milestone IV decision to modify the baseline radio, engineering and manufacturing development will be accomplished, improvements will be developed and tested, and the baseline system will be enhanced to meet mission requirements.</li> </ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE		FEBRUARY 1995					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S700									
<u>B. Program Change Summary</u>		FY94	FY95	FY96	FY97	Total Cost					
Previous President's Budget		7.714	4.467	.687	.705	Cont.					
Appropriated Value		7.714	3.639								
Adjustments to Appropriated Value / President's Budget		2.618	(.257)	1.040	1.628						
Current Budget Submit / President's Budget		10.332	3.382	1.727	2.333	Cont.					
Change Summary Explanation:											
Funding:		This project contains several sub-projects. FY 1994 net change due to JASORS funding being reprogrammed into Special Mission Radio System (SMRS) and SOF Tactical Assured Connectivity Systems (SOFTACS). FY 1995 decrease is a Congressional reduction of Defensewide RDT&E for travel, civilian pay and a directed Department of Energy reprogramming and a Congressional reduction in consulting services. FY 1996 through FY 1997 were decreased for inflation adjustment. FY 1996 and FY 1997 increases fund high priority SMRS and SOFTACS efforts.									
Technical:		None.									
Schedule:		None.									
<u>C. Other Program Funding Summary</u>		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	To Complete	Total Cost
PROC, Comm & Electronics		44.806	15.098	32.824	34.664	43.140	56.144	45.696	35.666	Cont.	Cont.



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		FEBRUARY 1995															
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7										R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S700																	
										FY94		FY95		FY96		FY97											
D. <u>Schedule Profile</u>										1	2	3	4	1	2	3	4	1	2	3	4						
Army Spec Ops Command Network MS III															x												
Special Mission Radio System MS IV*															x					x						x	
SOF Tactical Assured Connectivity																											
MS I															x												
MS II																	x										
MS III																			x								
MS IV*																									x		
Special Forces Base Station																											
MS IV (Phase II)																			x								
MS III																				x							
*MS IV decisions will be conducted for P3I insertions as technologies mature.																											

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project S700		
A. <u>Project Cost Breakdown</u> (\$ in thousands)	<u>FY94</u>	<u>FY95</u>	<u>FY96</u> <u>FY97</u>
1. Mobile Communications	146		
2. NSW Tactical Radio System	341		
3. Army Special Operations Command Network	4,797		
4. Improved Lightweight Satellite Antenna	732		
5. Special Forces Base Station	975	3,382	
6. Special Mission Radio System			
Interlocking Base Station Development	1,000		
Engineering Development		200	200
Software Development		644	644
Engineering Development Model		250	250
Development Test		50	50
Customer Test		50	50
7. SOF Tactical Assured Connectivity	2,341		
		199	792
8. Task Unit C3 Van Upgrade		334	347
TOTAL:	10,332	3,382	1,727 2,333

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7					R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project S700								
B. Budget Acquisition History and Planning Information													
Performing Organizations													
Actual or Budget Value (\$ in thousands)													
Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Product Development Organizations USA PM SATCOM/CECOM, Ft Mon. NJ SSDS, Englewood CO Mitre, McLean VA NAWC-AD, St Inigoes MD	MIPR	Various			415	732							
	CPFF	Jun 93			975	4,497							
	CPFF	Oct 93			250	353	80						
	MIPR	Various			1,548	4,234	3,212	1,727	2,333	Cont.	Cont.		
Support and Management Organizations Booz Allen Hamilton, McLean VA	CPFF	Oct 93				516	90			Cont.	Cont.		
Test and Evaluation Organizations													
Government Furnished Property													
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Subtotal Product Development					3,188	9,816	3,292	1,727	2,333	Cont.	Cont.		
Subtotal Support and Management						516	90			Cont.	Cont.		
Subtotal Test and Evaluation													
Total Project					3,188	10,332	3,382	1,727	2,333	Cont.	Cont.		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		FEBRUARY 1995							
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800									
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
S800, Special Operations Munitions Advanced Development		14.046	9.240	8.254	7.409	10.035	7.149	10.318	12.678	Cont.	Cont.

A. Mission Description and Budget Item Justification

This project provides for the acquisition of selected, specialized munitions and equipment to meet unique Special Operations Forces (SOF) requirements. This is a continuing program. Sub-projects include:

- Demolition Kit. Equipment to attach, initiate and control explosives for SOF applications.
- Enhanced Selectable Lightweight Attack Munition. Replaces Selectable Lightweight Attack Munition (SLAM) as an enhanced hand emplaced munition with capability to attack light armor at standoff distance of at least 50 feet. Utilizes SLAM common hardware with enhanced warhead, improved sensor discrimination, and remote on/off capability compatible with Remote Activated Munitions System.
- Improved 25mm Ammunition. The AC-130U 25mm gun system utilizes High Explosive Incendiary (HEI) ammunition to provide effective suppressive firepower. Available HEI ammunition does not meet present Gunship requirements for increased standoff ranges. This project modifies a 25mm round by replacing the current chemical fuze with a super quick fuze to meet increased standoff requirements and achieve point detonation. Tests for safety/reliability as well as operational flight test evaluations are included.
- Improved 40mm Ammunition. The refuizing of 40mm PGU-9A/B ammunition is classified as a safety modification. The MK-27 fuze is being replaced with a fuze that provides adequate safe separation from the aircraft prior to arming and is compliant with MIL-STD-1316D. Approximately 1.2 million rounds will be retrofitted.
- Improved 105mm Ammunition. The AC-130 105mm Howitzer gun system is intended to provide lethal firepower against light armor and hardened targets. This effort will evaluate candidates to modify or develop lethality improvements to include fuzing, penetration, propulsion, and warheads.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800		
<ul style="list-style-type: none"><li>● Lethality Enhancements. Program acquires a laser sensor capable of improving AC-130 Gunship first shot accuracy by measuring the wind at the target location real-time and using it in the fire control solution prior to the first gunfire. Acquisition strategy provides for a technology demonstration phase leading to a Milestone I/II decision after successful completion of flight tests. An engineering and manufacturing development phase will ensue with a production option for eight units. This effort transfers to project SF100 in FY 1997.</li><li>● 105mm Blast Reduction. All non-SOF unique ammunition to date has proven to be unsuitable for aircraft use because of the inherent blast overpressure. This project evaluates alternative methods and muzzle devices for 105mm guns to reduce said blast and overpressure while minimizing weapon signature. Blast reducers will further diminish technical risk for new ammunition developments by allowing increased muzzle energy and possibly permit some existing high energy ammunition to be used by SOF Gunships.</li><li>● Penetration Augmented Munition. Presently SOF has a limited capability to significantly damage concrete structures or pylons assigned as targets. This program develops a man portable, one step setup munition system with increased penetrating capability and greater warhead explosiveness.</li><li>● Selectable Lightweight Attack Munition. Develops a hand emplaced detonation device with various detonation methods (magnetic, command, timed, and infrared) to provide the capability to attack light armor targets at a standoff distance up to 25 feet.</li><li>● Remote Activated Munitions System (RAMS). Provides a capability to remotely control detonation of demolition charges or the remote operation of other items of equipment such as beacons, laser markers, radio functions, and weapons.</li><li>● SOF Enhanced Moldable Explosive Charge. An improved formulation, higher energy density than C-4 explosive.</li></ul>			
FY 1994 ACCOMPLISHMENTS:			
<ul style="list-style-type: none"><li>● (\$2,905K) 105mm Ammunition. Completed 105mm blast reduction improvements and evaluated Army and Navy developed ammunition for use on the AC-130 Gunship.</li><li>● (\$1,102K) Lethality Enhancements. Continued development of improved standoff capability for the AC-130 Gunship.</li></ul>			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800		
	<ul style="list-style-type: none"><li>• (\$5,341K) Penetration Augmented Munition (PAM). Conducted system integration test; conducted design review; fabricated and tested tactical configuration.</li><li>• (\$1,931K) Selectable Lightweight Attack Munition. Completed technical tests, Milestone III in-process review, and type classify standard.</li><li>• (\$2,767K) Remote Activated Munitions System (RAMS). Finalized initial design, fabricated and evaluated engineering hardware in a military environment, and initiated build of test hardware.</li></ul>		
FY 1995 PLAN:			
	<ul style="list-style-type: none"><li>• (\$2,810K) Lethality Enhancements. Evaluate and adapt advanced technologies for improving "1st Shot" hit capabilities.</li><li>• (\$1,654K) Ammunition Development. Adapt/modify and test existing U.S. Government and foreign services munitions for Gunship employment.</li><li>• (\$3,023K) PAM. Fabricate test hardware and initiate technical and user tests.</li><li>• (\$1,068K) RAMS. Initiate technical test/user test.</li><li>• (\$685K) SOF Demolition Kit: Initiate program. Conduct market survey and write statement of work.</li></ul>		
FY 1996 PLAN:			
	<ul style="list-style-type: none"><li>• (\$750K) Lethality Enhancements. Continue evaluating and adapting advanced technologies for improving "1st Shot" hit capabilities.</li><li>• (\$750K) Ammunition Development. Investigate Foreign Comparative Test program funded by Under Secretary of Defense for Acquisition and Technology.</li></ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		FEBRUARY 1995
R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800		
<ul style="list-style-type: none"> <li>• (\$519K) SOF Demolition Kit. Complete engineering and manufacturing development of selected kit items and begin procurement of those items.</li> <li>• (\$3,035K) Remote Activated Munitions System (RAMS). Continue Engineering and Manufacturing Development (EMD) and complete testing. Produce technical data package for the transmitter auxiliary power supply and Type A Receiver.</li> <li>• (\$3,200K) Penetration Augmented Munition. Complete EMD, testing, and conduct Milestone III review.</li> </ul>		
FY 1997 PLAN:		
<ul style="list-style-type: none"> <li>• (\$500K) Lethality Enhancements. Continue evaluating and adapting advanced technologies for improving "1st Shot" hit capabilities.</li> <li>• (\$500K) Ammunition Development. Transition adaptable foreign weapon systems identified through the Foreign Comparative Test program to production.</li> <li>• (\$3,619K) RAMS. Complete technical data package and testing of Type B receiver.</li> <li>• (\$1,519K) SOF Enhanced Moldable Explosive Charge. Initiate program. Conduct worldwide survey; write request for proposal and statement of work.</li> <li>• (\$521K) Enhanced Selectable Lightweight Attack Munition (ESLAM). Begin engineering to enhance SLAM capabilities.</li> <li>• (\$750K) DEMOKIT. Continue EMD of additional kit items.</li> </ul>		
ACQUISITION STRATEGY:		
<ul style="list-style-type: none"> <li>• Ammunition Development. Develop candidates for competitive award for EMD to produce production representative items for test and future procurement to include technical data packages.</li> </ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800					
<ul style="list-style-type: none"><li>● Penetration Augmented Munition (PAM). Competitively awarded Engineering and Manufacturing Development (EMD) contract with a cost type contract. Program will be tested by Army Test and Evaluation Command.</li><li>● SOF Enhanced Moldable Explosive Charge (SEMEC). Currently in technology base; will transition to an acquisition program.</li><li>● Remote Activated Munitions System (RAMS). Developmental program managed by Army Research and Engineering Center, Picatinny.</li></ul>							
B. <u>Program Change Summary</u>		FY94	FY95	FY96	FY97	Total Cost	
Previous President's Budget		14.648	9.540	8.844	4.007	Cont.	
Appropriated Value		14.648	9.540				
Adjustments to Appropriated Value / President's Budget		(.602)	(.300)	(.590)	3.402		
Current Budget Submit		14.046	9.240	8.254	7.409	Cont.	
Change Summary Explanation:							
Funding:	FY 1994 funding was reduced to fund higher priority efforts. FY 1995 decrease is a Congressional reduction of Defensewide RDT&E for travel, civilian pay and a directed Department of Energy reprogramming and a Congressional reduction in consulting services. Decrease in FY 1996 with corresponding increase in FY 1997 is to better align funding with expected obligations/outlays. FY 1997 increase initiates the SOF Enhanced Moldable Explosive Charge and the Enhanced Selectable Lightweight Attack Munition programs. FY 1996 and FY 1997 requests were also adjusted for inflation.						
Schedule:	PAM Milestone III slipped one year due to unanticipated difficulties in EMD.						
Technical:	None.						



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE		FEBRUARY 1995			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800								
C. <u>Other Program Funding Summary</u>										
	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	To Complete	Total Cost
PROC, Ordnance Acq.	17.668	13.930	23.887	19.892	19.384	16.938	27.504	16.698	Cont.	Cont.
PROC, Platform Gun Ammo	27.362	38.226								

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		FEBRUARY 1995																					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7										R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800																							
										FY94		FY95		FY96				FY97															
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
D. <u>Schedule Profile</u>																																	
Ammo Development																																	
105 mm MS I										x																							
105 mm MS II																																	
105 mm MS III																																	
Lethality Enhancements																																	
MS II (U-Model)										x																							
MS III (U-Model)										x																							
MS III (H-Model)										x																							
SOF Demolition Kit										x																							
MS I/II																																	
MS III										x																							
FUE																																	
Penetration Augmented Munition MS III																																	
SOF Enhanced Moldable Explosive Charge MS 0										x																							
Selectable Lightweight Attack Munition (SLAM)																																	
MS III										x																							
FUE																																	
Enhanced SLAM MS 0										x																							
Remote Activated Munitions System										x																							
MS I/II										x																							
MS III-1										x																							
MS III-2										x																							

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE PE 1160404BB Special Operations Tactical Systems Development / Project S800		
A. <u>Project Cost Breakdown</u> (\$ in thousands)		FY94	FY95
1. Ammunition Development			
105mm Blast Reduction Improvement		600	104
AC-130U Gunship Ammo		2,305	1,550
2. AC-130 Gunship Lethality Enhancements		1,102	2,810
4. Demolition Kit			685
5. Penetration Augmented Munition			
Engineering Development		5,341	2,250
Test			1,100
Fabrication / Material			1,100
6. SOF Enhanced Moldable Explosive			
Studies			
Engineering Development			1,264
7. Selectable Lightweight Attack Munition		1,931	255
8. Enhanced Selectable Lightweight Attack Munition			521
9. Remote Activated Munitions System			
Engineering Development		2,267	3,035
Fabrication / Material		500	1,769
			1,850
TOTAL:		14,046	8,254
			7,409

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE	FEBRUARY 1995
R-1 ITEM NOMENCLATURE										PE 1160404BB Special Operations Tactical Systems Development / Project S800	
APPROPRIATION / BUDGET ACTIVITY										RDT&E, DEFENSEWIDE / 7	
B. Budget Acquisition History and Planning Information										Actual or Budget Value (\$ in thousands)	
Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program
Product Development Organizations Air Force Systems Command LIW-A Army PM-Mines, Ctrmines and Demo.	ALLOT ALLOT	various various	NA NA	NA NA	45.104	4.007 10.039	2.964 4.776	1.500 6.754	1.000 6.409	Cont. Cont.	Cont. Cont.
Support and Management Organizations											
Test and Evaluation Organizations AF Special Mission OT&E Center	ALLOT	Dec 94	1.500	1.500			1.500				1.500
Government Furnished Property											
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program
Subtotal Product Development					45.104	14.046	7.740	8.254	7.409	Cont.	Cont.
Subtotal Support and Management											
Subtotal Test and Evaluation							1.500				1.500
Total Project					45.104	14.046	9.240	8.254	7.409	Cont.	Cont.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE PE 1160405BB Special Operations Intelligence Systems Development									
COST (in millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
PE 1160405BB (Special Operations Intelligence Systems Dev)		5.242	2.932	2.901	3.443	10.399	6.271	8.284	10.204	Cont.	Cont.
S400, SOF Intelligence R&D		5.242	2.932	2.901	3.443	10.399	6.271	8.284	10.204	Cont.	Cont.
A. <u>Mission Description and Budget Item Justification</u>											
Projects provide for identification, development, testing, and rapid procurement of selected SOF intelligence equipment to eliminate deficiencies in providing timely intelligence to deployed forces.											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE		FEBRUARY 1995						
APPROPRIATION / BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE / PROJECT NO.										
RDT&E, DEFENSEWIDE / 7		PE 1160405BB Special Operations Intelligence Systems Development / Project S400										
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost	
S400, SOF Intelligence R&D		5.242	2.932	2.901	3.443	10.399	6.271	8.284	10.204	Cont.	Cont.	
A. <u>Mission Description and Budget Item Justification</u>												
<p>This project provides for the identification, development, and testing of Special Operations Forces (SOF) intelligence equipment to identify and eliminate deficiencies in providing timely intelligence to deployed forces. The following distinct sub-projects address the primary areas of intelligence dissemination, sensor systems, integrated threat warning to SOF mission platforms, and tactical exploitation of national capabilities (TENCAP).</p> <p>USSOCOM has developed an overall strategy to ensure that Command, Control, Communications, Computers, and Intelligence (C4I) systems continue to provide SOF with the required capabilities into the 21st century. USSOCOM's C4I systems comprise an integrated network of systems providing positive command and control and timely exchange of intelligence and threat warning to all organizational echelons. The C4I systems that support this new architecture will employ the latest standards and technology by transitioning from separate systems to full integration with the infosphere. The infosphere will allow SOF elements to operate with any force combination in multiple environments. The C4I programs funded in this project are grouped by the level of organizational element they support: Operational Element (Team), Above Operational Element (Deployed), and Above Operational Element (Garrison). Sub-projects include:</p> <p>OPERATIONAL ELEMENT (TEAM)</p> <ul style="list-style-type: none"><li>● SOF SIGINT Manpack System (SSMS). The SSMS is a manpackable, lightweight communications collection and direction finding (DF) system that uses two low profile DF antennas to provide simultaneous coverage of the 1-1400 Mhz frequency range. It also includes a handheld antenna that provides quadrant DF for use during mobile operations and a single dipole antenna for simple monitoring operations. The system is powered by a variety of 12 volt DC internal batteries, and/or a solar blanket, or an external AC/DC converter. The SSMS will be deployed at the team level. An improved/maritime version is under development for NAVSPECWARCOM and USASOC use.</li><li>● Multi-mission Advanced Tactical Terminal (MATT). The MATT sub-project provides near-real-time operational intelligence information</li></ul>												



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations Intelligence Systems Development / Project S400		
<p>from national and tactical sources directly to SOF aircraft, ground-based units, and eventually maritime elements. The information will provide situational awareness, threat avoidance, and target acquisition, and will support mission planning. The Multi-mission Advanced Tactical Terminal (MATT) receiver/processor is a miniaturized, UHF, multi-channel receiver. It has embedded communications security and correlation, and programmable capability, including the potential incorporation of advanced cryptographic devices and transmit capabilities, which will transform the MATT into a highly integrated, scalable C4I system.</p>			
<ul style="list-style-type: none"><li>● Joint Intelligence System Integration (JISI). Funds a series of integration efforts to incorporate various SOF intelligence systems on the respective platforms employed by each of the SOF commands. Integration efforts will permit the operation of each intelligence system from within a controlling suite installed aboard a SOF platform without any system or platform degradation. Supports the joint compatibility and interoperability strategy of USSOCOM, as well as ensuring maximum use of Joint Deployable Intelligence Support System (JDISS)-compliant, UNIX-based hardware and software. Two internal sub-projects, PRIVATEER and SILENT SHIELD, were established to integrate SOF intelligence systems with the Cyclone-class Patrol Coastal and SOF aircraft, respectively. The PRIVATEER effort has evolved into an Acquisition Category IV program and is described next.</li><li>● PRIVATEER. Permanent shipboard installation that provides a full-spectrum passive electronic warfare capability for communications and radar early warning. System configuration provides the equipment necessary to monitor and provide direction finding on radar and communications signals of interest and provides access to data from the MATT, briefcase MATT, and Man-transportable Special Operations Command Research, Analysis, and Threat Evaluation System. PRIVATEER will be receive only and provide organic, near-real-time tactical information to the supported commanding officer and SEAL team leader. System developed based on NDI hardware with government furnished equipment integration maximizing commercial and government off-the-shelf software. Architecture is JDISS/Joint Maritime Communications and Intelligence Support System compliant with UNIX-based software.</li><li>● Tactical Exploitation of National Capabilities (TENCAP). TENCAP is a project to introduce and integrate national systems capabilities into the SOF force structure and operations. TENCAP activities include increasing national systems awareness; demonstrating the tactical utility of national system data; testing technology and evaluating operational concepts in biennial Joint Staff Special Projects; and transitioning promising concepts and technologies into the SOF materiel inventory.</li></ul>			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations Intelligence Systems Development / Project \$400		FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		
ABOVE OPERATIONAL ELEMENT (DEPLOYED)		
<ul style="list-style-type: none"><li>Multi-mission Advanced Tactical Terminal (MATT) and Special Operations Command Research, Analysis, and Threat Evaluation System (SOCRATES) are also planned for this level.</li></ul>		
ABOVE OPERATIONAL ELEMENT (GARRISON)		
<ul style="list-style-type: none"><li>SOCRATES. SOCRATES provides a wide range of mission required automated intelligence and imagery support to HQ USSOCOM, component commands and operating forces as well as USCENTCOM and components in garrison. SOCRATES, a Wide Area Network based multi-functional intelligence system, incorporates a variety of computers, data bases, intelligence communication systems, secure phones, facsimile equipment, imagery processing, secondary imagery dissemination and map handling equipment. SOCRATES provides SOF with unprecedented access to both national and specially-focused intelligence products, satisfying long-standing intelligence deficiencies identified in all five regional Commander In Chief Theater Intelligence Architectures. Product improvements are focused on integration of emerging intelligence community systems, technology, and standards into the SOCRATES architecture. Near-term improvements are focused on implementation of UNIX-based client server environment and integration of Department of Defense Intelligence Information System (DODIIS) Management Board directed Joint Deployable Intelligence Support System standards.</li></ul>		
FY 1994 ACCOMPLISHMENTS:		
<ul style="list-style-type: none"><li>(\$244K) SOCRATES. Completed developmental testing of Man-Transportable SOCRATES prototypes. Continued integration of emerging DODIIS standard capabilities into the SOCRATES architecture.</li><li>(\$3,319K) MATT. Continued development of the Tactical Information Broadcast Service (TIBS) capability. Continued MH-53J integration efforts and commenced platform integration studies on other SOF platforms, i.e. Combat Talon II.</li><li>(\$927K) Joint Intelligence System Integration (JISI). Performed an antenna study for C-130 implementation in support of the Phase II SILENT SHIELD prototyping effort. Partially funded the Triple Receiver engineering change proposal for the SOF SIGINT Manpack</li></ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
RDT&E BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations Intelligence Systems Development / Project S400
<p>System (SSMS) Version 2. Performed a helicopter evaluation of the SSMS. Performed an electromagnetic characterization of the Patrol Coastal and PRIVATEER system. Developed five Maritime SSMSs and dual receivers.</p> <ul style="list-style-type: none"> <li>• (\$752K) Tactical Exploitation of National Capabilities (TENCAP). Provided national systems support to SOF countermine warfare operators. Explored the tactical application of automated multi-level security concepts and technologies. Commenced planning for Joint Chiefs of Staff Special Project 95, a TENCAP demonstration which applies strategic capabilities to tactical applications such as escape and evasion, targeting and reconnaissance. Continued national system exercise support for SOF. Evaluated alternative concepts for primary imagery dissemination and fusion. Applied and assessed visible marking technology to the SOF mission. Investigated national precision targeting and beacon, tracking, and signals location technology for SOF applications. Commenced defining SOF tactical data processor and fusion workstation needs.</li> </ul> <p>FY 1995 PLAN:</p> <ul style="list-style-type: none"> <li>• (\$122K) Special Operations Command Research, Analysis, and Threat Evaluation System (SOCRATES). Test and evaluate UNIX client server environment. Evaluate and integrate commercial off-the-shelf and government off-the-shelf products for SOCRATES enhancements. Investigate means to fully integrate near-real-time data feeds to support mission planning.</li> <li>• (\$1,533K) Multi-mission Advanced Tactical Terminal (MATT). Perform full operational test and evaluation of Tactical Information Broadcast System receiver module and transition to production. Continue platform integration studies on other SOF platforms. Develop preliminary designs for integrating advanced cryptographic device into the MATT system. Upgrade radio frequency segment and processors to incorporate additional command, control, communications, computer and intelligence capabilities.</li> <li>• (\$408K) Joint Intelligence Systems Integration (JISI). Completed Triple Receiver engineering change proposal for the SSMS Version 2.</li> <li>• (\$869K) TENCAP. Use Joint Staff Special Project 95 as a vehicle for demonstrating and assessing national technologies to SOF forces. Develop technology for HAMLET'S QUEST (precision targeting), HAMLET'S COVE (countermine), and HAMLET'S TRACK (beacon). Initiate study to develop an S-band SEM-E based transceiver card for the MATT.</li> </ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations Intelligence Systems Development / Project S400		
FY 1996 PLAN:			
●	(\$320K) Joint Intelligence Systems Integration (JISI). Develop, downsize, integrate, and test a deployable electronic intelligence package. Provide a multi-scanner/modern modulation intercept capability for testing and evaluation. Integrate and test secure satellite communications for PRIVATEER aboard Patrol Coastal ships.		
●	(\$746K) Tactical Exploitation of National Capabilities (TENCAP). Prototype receive and processing capabilities associated with the reception and exploitation of secondary imagery and other intelligence products through the AN/SMQ-11. Continue investigation of advanced processing and exploitation techniques associated with imagery fusion techniques for HAMLET'S COVE (sensors for mine/countermine detection). Initiate Automatic Target Recognition and multi-discipline intelligence support for HAMLET'S COVE.		
●	(\$97K) Special Operations Command Research, Analysis and Threat Evaluation System (SOCRATES). Engineering development and technical integration of nationally directed intelligence migration products into the SOCRATES architecture.		
●	(\$1,439K) Multi-mission Advanced Tactical Terminal (MATT). Continue platform integration efforts. Complete integration of secondary imagery into MATT. Continue to upgrade radio segment to include SHF/UHF/VHF. Continue communications security upgrade. Upgrade digital processor.		
●	(\$299K) SOF SIGINT Manpack System (SSMS) Version 2. Identify and capture maturing commercial and government off-the-shelf hardware and software functionalities for integration into SSMS: network interface protocol, fiber optic antenna interface, and overall reductions in size, weight, and power requirements.		
FY 1997 PLAN:			
●	(\$390K) JISI. Development, downsizing, integration and testing of advanced contractor off-the-shelf communications intelligence antennas and direction finding capabilities.		
●	(\$1,277K) TENCAP. Participate in an advanced concepts technology demonstration which will emphasize shallow water and beach land		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations Intelligence Systems Development / Project S400		
<p>areas. Participate in the development and test of the prototype S-band Standard Electronic Module-E based transceiver card for the Multi-mission Advanced Tactical Terminal (MATT); the development of the S-band and AM/SMQ-11 interface and Concept of Operations (CONOPS); the test of secondary imagery receive capability; and the preparation of interface CONOPS for integrated unattended ground systems through national technical means.</p> <ul style="list-style-type: none"> <li>• (\$99K) Special Operations Command Research, Analysis and Threat Evaluation System (SOCRATES). Continue engineering development and technical integration of nationally directed intelligence migration products into the SOCRATES architecture.</li> <li>• (\$1,378K) MATT. Continue platform integration efforts. Complete upgrade of communications security and radio segments to include SHF/UHF/VHF. Upgrade digital processor. Complete Tactical Reconnaissance Information Exchange System upgrade.</li> <li>• (\$299K) SOF SIGINT Manpack System (SSMS) Version 2. Continue off-the-shelf hardware and software functionalities for integration into SSMS: speaker/language identification, a modern modulation capability, computer assisted search and data base construction, an improved man-machine interface, and overall reductions in size, weight, and power requirements.</li> </ul> <p>ACQUISITION STRATEGY:</p> <ul style="list-style-type: none"> <li>• MATT. The acquisition strategy is based on the FY 1993 competitively awarded production contract. R&amp;D efforts allow for P3I of emerging technology into MATT during production and deployment.</li> </ul>			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations Intelligence Systems Development / Project S400			
<u>B. Program Change Summary</u>		FY94	FY95	FY96	FY97
Previous President's Budget		6.686	2.958	3.388	3.057
Appropriated Value		6.686	2.958		
Adjustments to Appropriated Value / President's Budget		(1.444)	(.026)	(.487)	.386
Current Budget Submit		5.242	2.932	2.901	3.443
Total Cost					Cont.
Change Summary Explanation:					
Funding:		FY 1994 decrease reflects cancellation of the Communications Monitoring System development and minor restructuring of other projects to fund higher priority SOF efforts. FY 1995 decrease is for Congressional reduction of Defensewide RDT&E for travel, civilian pay and a directed Department of Energy reprogramming. Decrease in FY 1996 with corresponding increase in FY 1997 is to better align funding with expected obligations/outlays. FY 1996 and FY 1997 requests were adjusted for inflation.			
Schedule:		None.			
Technical:		None.			
<u>C. Other Program Funding Summary</u>		FY94	FY95	FY96	FY97
PROC, SOF Intel Systems		27.761	13.523	19.510	15.051
FY98		36.749	38.630	72.001	60.292
FY00					
FY01					
To Complete					
Total Cost					Cont.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		FEBRUARY 1995			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations Intelligence Systems Development / Project S400													
		FY94		FY95		FY96		FY97							
D. <u>Schedule Profile</u>		1	2	3	4	1	2	3	4	1	2	3	4		
SOCRATES Version Upgrades					x						x		x		
Begin Development of Improved-SSMS										x					
MATT															
Complete Tactical Info Broadcast System Dev.								x							
Crypto Upgrade												x			
RF Upgrade												x			
Processor Upgrade												x			

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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE PE 1160405BB Special Operations Intelligence Systems Development / Project S400		
A. <u>Project Cost Breakdown</u> (\$ in thousands)	<u>FY94</u>	<u>FY95</u>	<u>FY96</u> <u>FY97</u>
1. SOCRATES	244	122	97 99
2. Joint Intelligence Systems Integration	927	408	320 390
3. Tactical Exploitation of National Capabilities			
HAMLET'S COVE	400	399	346 653
HAMLET'S TRACK	202	150	200 374
NIGHT VECTOR		100	200 250
HAMLET'S MARK	150		
HAMLET'S FOREST		220	
4. SOF SIGINT Manpack System II			299
5. Multi-Mission Advanced Tactical Terminal			
Tactical Info Broadcast System and MTS Integration	2,500	356	100
Platform Integration Studies	819	387	200 200
Advanced Cryptologic Device		190	143 508
Receiver Upgrade		600	750 500
Advanced Processor			246 170
TOTAL:	5,242	2,932	2,901 3,443



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RDT&E PROGRAM ELEMENT / PROJECT COST BREAKDOWN (R-3)										DATE		FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE								
RDT&E, DEFENSEWIDE / 7					PE 1160405BB Special Operations Intelligence Systems Development / Project S400								
B. <u>Budget Acquisition History and Planning Information</u>													
Performing Organizations													
Actual or Budget Value (\$ in thousands)													
Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Product Development Organizations													
SAIC, McLean VA	C/CPFF	Various				166							
NRL, Washington DC	MIPR	Various				917							
E-Systems, Greenville TX	C/CPFF	Sep 92			3,600	360		349	350				
Delfin Systems, Santa Clara CA	C/CPFF	Aug 92			1,066	567		320	390				
Delfin Systems, Santa Clara CA	SS/CPFF	Jan 96						299	299				
UAAF, SAF Washington DC	Various	Various				1,950		296	722				
USAF, 46th Test Wing, Eglin AFB FL	MIPR	Jan 95						100	150				
Defense, Opnl Spt Ofc, Wash DC	Various	Various			10,300	150		190	190				
LORAL Fed Sys, Owego NY	SS/CPFF	Aug 94				419		478	238				
NRAD, San Diego CA	Various	Various			13,018	337		649	655				
Miscellaneous	Various	Various											
Support and Management Organizations													
Booz-Allen & Hamilton	CPFF	Apr 93			200	350		300	350				
Test and Evaluation Organizations													
Government Furnished Property													
Item Description	Contract Methd/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY94	Budget FY94	Budget FY95	Budget FY96	Budget FY97	Budget to Complete	Total Program		
Subtotal Product Development					27,784	4,892	2,682	2,601	3,093				
Subtotal Support and Management					200	350	250	300	350				
Subtotal Test and Evaluation													
Total Project					27,984	5,242	2,932	2,901	3,443				

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Exhibit R-3

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7		R-1 ITEM NOMENCLATURE PE 1160407BB SOF Medical Technology Development									
COST (in millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
PE 1160407BB (SOF Medical Technology Development)		1.310	1.782	1.891	2.377	2.639	2.726	2.801	2.880	Cont.	Cont.
S275, SOF Medical Technology R&D		1.310	1.782	1.891	2.377	2.639	2.726	2.801	2.880	Cont.	Cont.
<p><b>A. Mission Description and Budget Item Justification</b></p> <p>Projects provide studies and laboratory prototypes for USSOCOM to link non-system basic and exploratory research and development to SOF specific system engineering and manufacturing development and procurement. The focus is on medical technologies, centering on physiologic, psychologic and ergonomic factors affecting the ability of forces to perform their missions.</p>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE		FEBRUARY 1995				
APPROPRIATION / BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE / PROJECT NO.									
RDT&E, DEFENSEWIDE / 7		PE 1160407BB SOF Medical Technology Development / Project S275									
COST (In Millions)		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	Cost to Complete	Total Cost
S275, SOF Medical Technology R&D		1.310	1.782	1.891	2.377	2.639	2.726	2.801	2.880	Cont.	Cont.
A. <u>Mission Description and Budget Item Justification</u>											
<p>This project provides studies and non-system basic and exploratory research and development. The focus is on medical technologies, centering on physiologic, psychologic and ergonomic factors affecting the ability of forces to perform their missions. Current medical research and equipment does not meet force requirements. The unique nature of special operations and the requirements for lightweight, sustainable medical equipment, high altitude life support capabilities for combat parachutists, and improved life support capabilities for the combat swimmer must be resolved. This project addresses the physiologic, psychologic, and ergonomic aspects of all operations, and provides guidelines for the development of selection and conditioning criteria, thermal protection, decompression procedures, and life support systems. This project will support the development of biomedical enhancements for the unique requirements of SEALs and SEAL Delivery Vehicle teams in the conduct of their diverse underwater missions. This effort is defined by the following seven areas of investigation:</p> <ul style="list-style-type: none"><li>● Inhaled gas toxicology will: (1) evaluate the feasibility of using pharmacologic intervention to reduce or eliminate the possibility of central nervous system toxicity; (2) study the clinical symptoms experienced when divers are exposed to an elevated partial pressure of carbon dioxide and develop a training protocol to help SEAL trainees recognize the early symptoms of carbon dioxide buildup.</li><li>● Decompression procedures for Naval Special Warfare (NSW) diving operations will: (1) decrease the decompression obligation in NSW diving operations through the use of surface-interval oxygen breathing; (2) investigate pre-oxygenation requirements for high-altitude SOF parachute operations.</li><li>● Thermal protection will: (1) conduct a survey of available thermal protection garments and conduct a comparative study to determine their relative effectiveness at protecting personnel engaged in small boat operations; (2) evaluate the efficacy of current thermal protective measures in maintaining combat swimmer performance.</li><li>● Combat casualty management in NSW operations will: (1) review the emergency medical equipment currently used in the NSW</li></ul>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160407BB SOF Medical Technology Development / Project S275		
<p>Community and compare this to currently available civilian technology; it will also provide field testing of emergency medical equipment in the adverse environmental conditions encountered in Naval Special Warfare (NSW); (2) evaluate current tactical combat casualty care doctrine to ensure consideration of the wide variety of tactical scenarios encountered and apply the latest concepts in casualty care to these circumstances; (3) develop CD-ROM based computer programs with voice capability to conduct medical interviews in multiple foreign languages.</p> <ul style="list-style-type: none"><li>● Exercise-related injuries will evaluate the effectiveness of applying sports medicine diagnostic, therapeutic, and rehabilitative techniques in management of the traumatic and overuse injuries commonly encountered among NSW operators.</li><li>● Mission-related physiology will: (1) develop accurate measures to evaluate Special Operations Forces mission-related performance; (2) evaluate the suitability of Photorefractive Keratectomy, a new refractive surgical procedure, for special operations personnel; (3) delineate nutritional strategies designed to help personnel apply known nutritional concepts to optimize performance in mission and training scenarios; (4) evaluate potential ergogenic agents as they apply to enhancing mission-related performance; (5) study the safety and efficacy of using caffeine to increase performance in sustained operations; (6) develop a quantitative test for night vision suitable for screening SOF candidates and study ways to enhance unaided night vision; (7) develop techniques for using oxygen to increase breathhold dive time; (8) study pharmacologic measures to prevent acute mountain sickness in high terrestrial SOF operations.</li><li>● Medical sustainment training techniques will: (1) examine novel ways of both providing and documenting medical sustainment training for NSW corpsmen and physicians; (2) develop a system for constantly upgrading the medical expertise of NSW medical personnel by incorporating new research reports and clinical information into a CD-ROM base computer system which can be used by medical personnel in isolated duty circumstances.</li></ul>			
FY 1994 ACCOMPLISHMENTS:			
<ul style="list-style-type: none"><li>● Initiated studies as follows:<ul style="list-style-type: none"><li>● (\$87K) Excimer Laser Photorefractive Keratectomy in NSW personnel.</li></ul></li></ul>			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
R-1 ITEM NOMENCLATURE / PROJECT NO.		FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	PE 1160407BB SOF Medical Technology Development / Project S275	
<ul style="list-style-type: none"><li>• (\$50K) Combat Casualty Care in Special Operations.</li><li>• (\$60K) Exercise-Related Injury Program.</li><li>• (\$103K) SEAL Computer-Assisted Medical Reference System.</li><li>• (\$75K) Hypercarpia Recognition Training.</li><li>• (\$50K) Combat Casualty Equipment Review.</li><li>• (\$52K) Maximum Performance Nutrition Manual.</li><li>• (\$36K) Special Operations Medical Translator.</li></ul>		
<ul style="list-style-type: none"><li>• Continued ongoing studies as follows:<ul style="list-style-type: none"><li>• (\$100K) Computer-Based Naval Special Warfare (NSW) Corpsman Training Program.</li><li>• (\$124K) Quantification of NSW Mission-Related Performance.</li><li>• (\$130K) Surface Interval Oxygen Repetitive Dive Tables.</li><li>• (\$205K) Prophylactic measures for central nervous system oxygen toxicity.</li><li>• (\$102K) Night vision enhancement.</li></ul></li></ul>		
<ul style="list-style-type: none"><li>• Completed studies as follows:<ul style="list-style-type: none"><li>• (\$17K) Biomedical Factors In Advanced SEAL Delivery System.</li><li>• (\$119K) Emergency Oxygen Decompression Procedures.</li></ul></li></ul>		
FY 1995 PLAN:		
<ul style="list-style-type: none"><li>• (\$1,212K) Continue ongoing studies as follows: SEAL Computer-Assisted Medical Reference System; Computer-Based NSW Corpsman Training Program; Quantification of NSW Mission-Related Performance; Excimer Laser Photorefractive Keratectomy (PRK) in NSW Personnel; Exercise-Related Injury Program; Hypercarpia Recognition Training; SOF Maximum Performance Nutrition Manual; Special Operations Medical Translator; Combat Casualty Care in Special Operations; Combat Casualty Equipment Review; Surface Interval</li></ul>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160407BB SOF Medical Technology Development / Project S275		
Oxygen Repetitive Dive Tables; Prophylactic Measures for Central Nervous System (CNS) Oxygen Toxicity; Night Vision Enhancement.			
<ul style="list-style-type: none"><li>• (\$570K) Initiate new studies such as: Sustained Operations Performance Enhancement with Caffeine; Pre-Oxygenation Requirements for High Altitude Parachute Operations; Thermal Protection in Naval Special Warfare (NSW) Small Boat Operations; Ergogenics in Naval Special Warfare; Oxygen-Enhanced Breath-hold Diving; Pharmacologic Prevention of Motion Sickness.</li></ul>			
FY 1996 PLAN:			
<ul style="list-style-type: none"><li>• (\$1,891K) Continue ongoing studies as follows: SEAL Computer-Assisted Medical Reference System; Quantification of Mission-Related Performance; Excimer Laser Photorefractive Keratectomy in NSW Personnel; Tactical Combat Casualty Care in Special Operations; Combat Casualty Equipment Review; Surface Interval Oxygen Repetitive Dive Tables; Thermal Protection in Small Boat Operations; Ergogenics (Performance Enhancing Agents) in SOF Operations; Performance Enhancement with Caffeine; Pre-Oxygenation Requirements in High Altitude Low Opening/High Altitude Parachute Operations; Oxygen-Enhanced Breathhold Diving; Night Vision Enhancement; Special Operations Medical Translator; Pharmacologic prevention of Motion Sickness.</li></ul>			
FY 1997 PLAN:			
<ul style="list-style-type: none"><li>• (\$1,474K) Continue ongoing studies as follows: SEAL Computer-Assisted Medical Reference System; Computer-Based Corpsman Training Program; Quantification of Mission-Related Performance; Combat Casualty Equipment Review; Ergogenics (Performance Enhancing Agents) in Special Operations; Oxygen-Enhanced Breathhold Diving.</li><li>• (\$903K) Initiate new studies such as: Laser Threat and Protective Measures in Special Operations; Reduction of Central Nervous System Oxygen Toxicity Risk with Modified Draeger LAR V Purging Procedure; Thermal Garment Comparison Study; Prevention and Treatment of Jet Lag with Melatonin.</li></ul>			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 1995	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSEWIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160407BB SOF Medical Technology Development / Project S275			
ACQUISITION STRATEGY: NA				
B. <u>Program Change Summary</u>		FY94	FY95	FY96
Previous President's Budget		1.310	1.798	1.785
Appropriated Value		1.310	1.798	2.141
Adjustments to Appropriated Value / President's Budget			(.016)	.236
Current Budget Submit / President's Budget		1.310	1.782	1.891
Change Summary Explanation:				2.377
Funding:	FY 1995 decrease for Congressional reduction of Defensewide RDT&E for travel, civilian pay and a directed Department of Energy reprogramming. FY 1996 programming was increased to fund additional development of surface interval oxygen decompression procedures. FY 1997 programming was increased to identify ways to decrease the effect of travel induced changes in cardiac rhythm (Jet Lag) on mission performance and study methods to improve protection from laser induced injury. FY 1996 and FY 1997 requests were also adjusted for inflation and to better align funding with expected obligations/outlays.			Cont.
Schedule:	None.			
Technical:	None.			
C. <u>Other Program Funding Summary</u>	None.			
D. <u>Schedule Profile</u>	NA.			